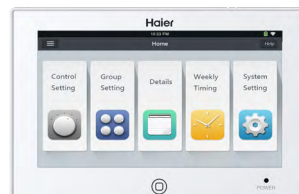
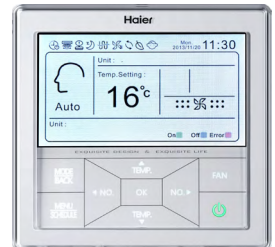


# CONTROLLER MANUAL













Haier









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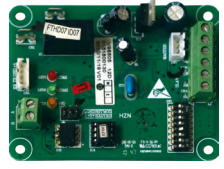


## 1. Products Lineup

No.	Control system		Model	Photo
1	Individual control	Remote Controller	YR-HD	
2			YR-HBS01	
3			YR-H005	
4			YL-HE	
5			YR-H71	
6	Individual control	Wired Controller	YR-E17	
7			YR-E20	
8			HW-BA116ABK	
9			YR-E16A	
10			HW-CA101AGK	

No.	Control system		Model	Photo
11	Individual control	Wired Controller	YR-E16	
12			YR-F02	
13			YR-E14	
14	Central control	Touch Screen Central Controller	YCZ-A004	
15		Group controller	YCZ-G001	
16		Touch Screen Central Controller	YCZ-A003	
17	Building management system	Local control version BMS system	HCM-01A	
18			HCM-01	

No.	Control system		Model	Photo
19	Building management system	Remote monitoring version 3 BMS system	HCM-03	
20			HCM-03	
21		Remote monitoring version 5 BMS system	HCM-05	
22			HCM-05A	
23	Gateway	Modbus	HA-MA164AD	
24		Modbus	HA-MB164AD	
25		Modbus	IGU02	
26		Modbus	IGU06	

No.	Control system		Model	Photo
27	Gateway	LonWorks	IGU07	
28		Central controller	IGU05	
29	Adapter	/	YCJ-A002	

## 2. Remote controller

### 2.1 YR-HD

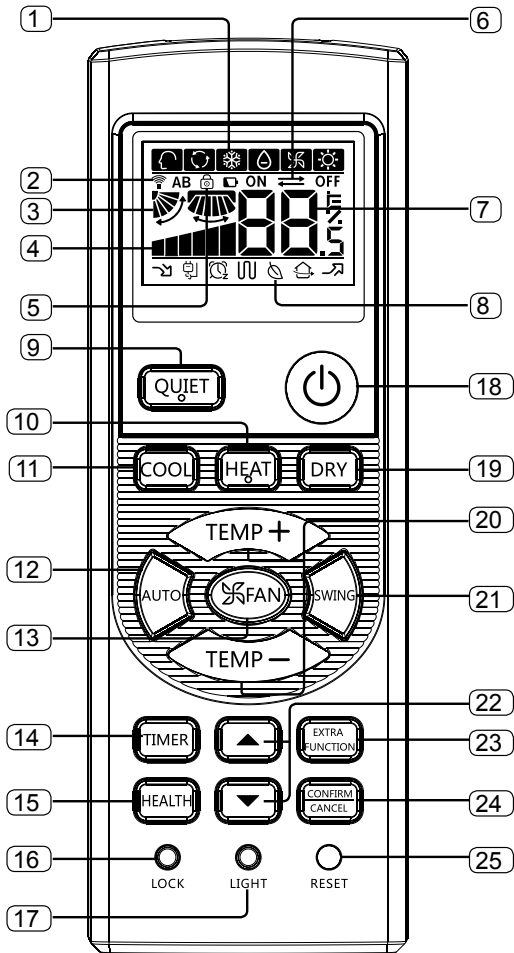


MRV	LCAC			
	Smart Power	Super Match	R410A ON/OFF	R22 ON/OFF
√		√	√	

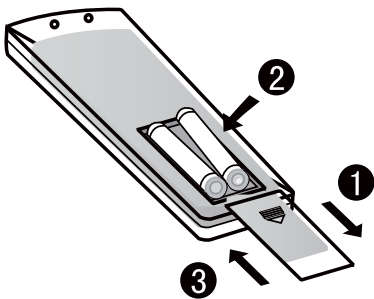
- On/Off, Mode, Fan speed, Temperature setting, Swing
- Individual control
- Mode: one button solution. Cool, Heat, Dry, Quite.
- Timer
- Clock

## Parts and Functions

### • Remote controller



### • Loading of the battery



1. Remove the battery cover;
2. Load the batteries as illustrated. 2 R-03 batteries, resetting key (cylinder);
3. Be sure that the loading is in line with the "+" and "-";
4. Load the battery, then put on the cover again.

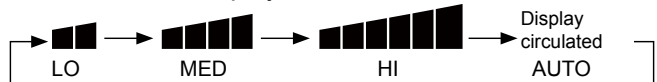
### 1. Mode display

Operation mode	AUTO	COOL	DRY
Remote controller			
Operation mode	HEAT	FAN	
Remote controller			

### 2. Signal sending display

### 3. SWING display

### 4. FAN SPEED display



### 5. LOCK display

### 6. TIMER OFF display

### TIMER ON display

### 7. TEMP display

### 8. Additional functions display

Operation mode	QUITE	SLEEP	TURBO	FRESH
Remote controller				
Operation mode	ELECTRICAL HEATING		HEALTH	
Remote controller				

### 9. QUIET button

### 10. HEAT button

### 11. COOL button

### 12. AUTO button

### 13. FAN SPEED button

### 14. TIMER button

### 15. HEALTH button

### 16. LOCK button

Used to lock buttons and LCD display.

### 17. LIGHT button (This model has not this function.)

Control the lightening and extinguishing of the indoor LED display board.

### 18. POWER ON/OFF button

### 19. DRY button

### 20. TEMP button

### 21. SWING button

### 22. Timer adjust button

### 23. EXTRA FUNCTION button

Function: Fan only function, health airflow upwards and downwards sending function, sleep function, Fresh function, Fahrenheit Celsius conversion, Power setting function, left and right swing function, 10°C heating function,

B code, Electrical Heating function.

### 24. CANCEL/CONFIRM button

Function: Setting and cancel to the timer and other additional functions.

### 25. RESET button

When the remote controller appears abnormal, use a sharp pointed article to press this button to reset the remote.

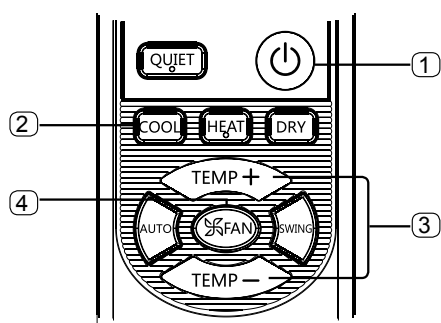
**Note:**

- The distance between the signal transmission head and the receiver hole should be within 7m without any obstacle as well.
- When electronic-started type fluorescent lamp or change-over type fluorescent lamp or wireless telephone is installed in the room, the receiver is apt to be disturbed in receiving the signals, so the distance to the indoor unit should be shorter.
- Full display or unclear display during operation indicates the batteries have been used up. Please change batteries.
- If the remote controller can't run normally during operation, please remove the batteries and reload several minutes later.

Hint: Remove the batteries in case won't be in use for a long period. If there is any display after taking-out, just press reset key.

## Operation

### • Base Operation



#### 1. Unit start

Press ON/OFF on the remote controller, unit starts.

#### 2. Select operation mode

COOL button: Cooling mode; HEAT button: Heating mode; DRY button: Dehumidify mode

#### 3. Select temp. setting

Press / button

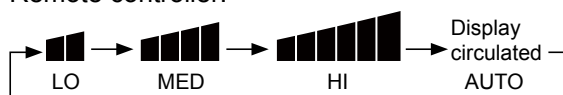
Every time the button is pressed, temp. setting increase 1°C, if kept depressed, it will increase rapidly.

Every time the button is pressed, temp. setting decrease 1°C, if kept depressed, it will decrease rapidly. Select a desired temperature.

#### 4. Fan speed selection

Press FAN button. For each press, fan speed changes as follows:

Remote controller:



Air conditioner is running under displayed fan speed. When FAN is set to AUTO, the air conditioner automatically adjusts the fan speed according to room temperature.

Operation Mode	Remote Controller	Note
AUTO		Under the mode of auto operation, air conditioner will automatically select Cool /Heat / Fan operation according to room temperature. When FAN is set to AUTO the air conditioner automatically adjusts the fan speed according to room temperature.
COOL		
DRY		In DRY mode , when room temperature becomes lower than temp.setting+2°C, unit will run intermittently at LOW speed regardless of FAN setting (only valid for part of models).
HEAT		In HEAT mode, warm air will blow out after a short period of the time due to cold-draft prevention function. When FAN is set to AUTO, the air conditioner automatically adjusts the fan speed according to room temperature.
FAN		In FAN operation mode , the unit will not operate in COOL or HEAT mode but only in FAN mode, AUTO is not available in FAN mode. And temp. setting is disabled. In FAN mode, sleep operation is not available.

### • Sleep Operation

Press button to enter additional options, when cycle display to , will flash. And then press enter to sleep function.

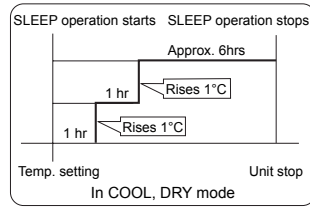
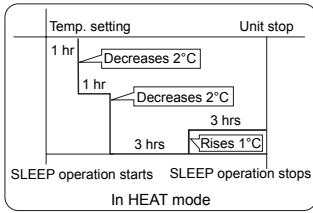
### • Operation Mode

#### 1. In COOL, DRY mode

1 hours after SLEEP mode starts, temp. will become 1°C higher than temp. setting. After another 1 hours, temp. rises by 1°C futher. The unit will run for further 6 hours then stops Temp. is higher than temp.setting so that room temperature won't be too low for your sleep.

#### 2.In HEAT mode

1 hours after SLEEP mode starts, temp. will become 2°C lower than temp. setting. After another 1 hours, temp decrease by 2°C futher. After more another 3 hours, temp. rises by 1°C futher. The unit will run for further 3 hours then stops. Temp. is lower than temp. setting so that room temperature won't be too high for your sleep.



### 3. In AUTO mode

The unit operates in corresponding sleep mode adapted to the automatically selected operation mode.

### 4. In FAN mode

It has no SLEEP function.

Note: When TIMER function is set, the sleeping function can't be set up. After the sleeping function is set up, if user resets TIMER function, the sleeping function will be cancelled; the machine will be in the state of timing on/ timing off.

## • POWER/QUIET Operation

### 1. POWER Operation

When you need rapid heating or cooling, you can use this function. Press button to enter additional options, when cycle display to , will flash, and then press , enter to power function. When cancel the function, please enter additional options again and to cancel power function.

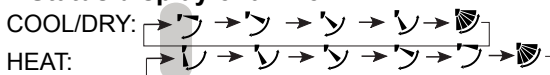
### 2. QUIET Operation

You can use this function when silence is needed for rest or reading. Press QUIET button, the remote controller will show , and then achieve to the quiet function. Press again this QUIET button , the quiet function will be cancelled.

Note: During POWER operation, in rapid HEAT or COOL mode, the room will show inhomogeneous temperature distribution. Long period QUIET operation will cause effect of not too cool or not too warm.

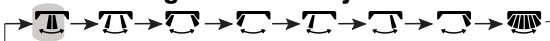
## • Air Flow Direction Adjustment

### 1. Status display of air flow



Initial state

### 2. Left and right air flow adjustment

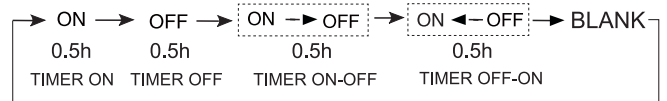


Initial state

## • Timer On/Off On-Off Operation

1. After unit starts, select your desired operation mode.

2. Press **TIMER** button to change **TIMER** mode. Every time the button is pressed, display changes as follows:  
Remote controller:



Then select your desired **TIMER** mode (**TIMER ON** or **TIMER OFF** or **TIMER ON-OFF**). "**ON**" or "**OFF**" will flash.

3. Press / button to set time.

Press the button for each time, setting time in the first 12 hours increased by 0.5 hour every time, after 12 hours, increased by 1 hour every time.

Press the button for each time, setting time in the first 12 hours decreased by 0.5 hour every time, after 12 hours, decreased by 1 hour every time. It can be adjusted within 24 hours.

### 4. Confirm timer setting

After adjust the time, press button and confirm the time **ON** or **OFF** button will not flash any more.

### 5. Cancel timer setting

Press the timer button by times until the time display eliminated.

Press button to cancel timer setting.

Hints: After replacing batteries or a power failure happens, time setting should be reset. According to the Time setting sequence of **TIMER ON** or **TIMER OFF**, either Start-Stop or Stop-Start can be achieved.

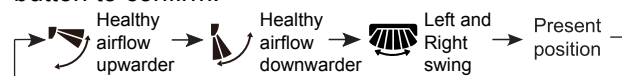
## • Healthy airflow Operation

### 1. Press to starting

Setting the comfort work conditions.

### 2. The setting of healthy airflow function

Press button to enter additional options, Press this button continuously, the louvers location will cycle between in the following three locations, to choose the swing location what you needed, and then press button to confirm.



### 3. The cancel of the healthy airflow function

Press button to enter additional options, Press this button continuously, the louvers location will cycle between in the following three locations again, and then press button to cancel.

Note:

1. After setting the healthy airflow function, the position grill is fixed.

2. In heating, it is better to select the mode.

3. In cooling, it is better to select the mode.

4. In cooling and dry, using the air conditioner for a long time under the high air humidity, condensate water may occur at the grille .



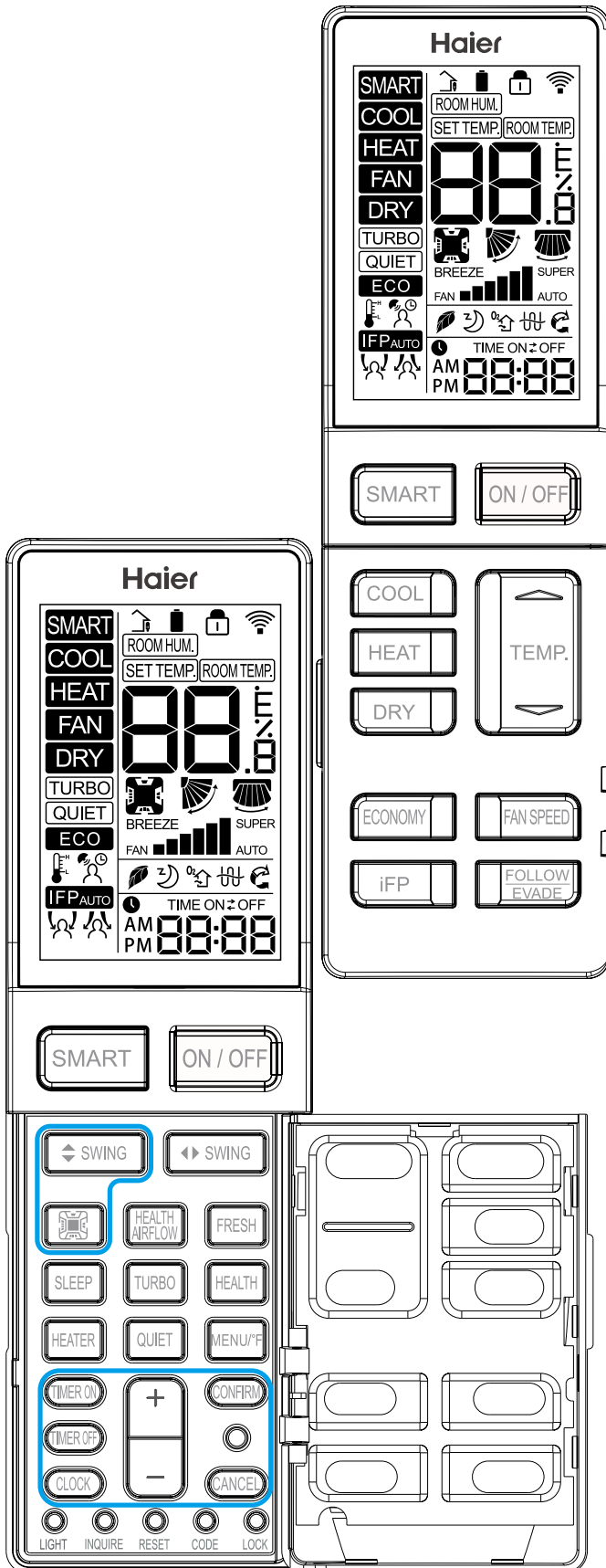
## 2.2 YR-HBS01



MRV	LCAC			
	Smart Power	Super Match	R410A ON/OFF	R22 ON/OFF
√	√			

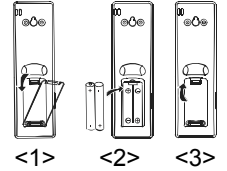
- On/Off, Mode, Fan speed, Temperature setting, Swing
- °C/ °F selection
- Individual control
- Five grades of fan speed
- Individual blade control for Smart Power Cassette
- Clock & Timer
- Moving eye control (Follow/Evade function)

## External View of Remote Controller



## Loading of the battery

1. Remove the battery cover;
2. Load the batteries as illustrated. 2 R-03 batteries, resetting key (cylinder); Be sure that the loading is in line with the "+" / "-";
3. Load the battery, then put on the cover again.



## Functional description

- 1. Power-up and Show All:** the LCD display shows all symbols in this function. 3s later, it just shows time and the initial time is AM 12:00. The initial time is adjustable and will be confirmed automatically 10s later.
- 2. ON/OFF Button:** press the button for power on. The initial default mode is SMART, otherwise it will be the mode before power OFF. Press OFF button after power on.
- 3. SMART Button:**
  - (1) SMART button is always valid during power ON/OFF;
  - (2) Press SMART button to execute power OFF in SMART mode;
  - (3) In OFF and other modes, press SMART button to enter initial default setting of SMART mode. LCD setting temperature is not showed;
  - (4) In SMART mode, press TEMP. +/- button to show the setting temperature.
- 4. COOL Button, HEAT Button and DRY Button**
  - (1) When the remote controller in ON, press COOL button, HEAT button and DRY button to execute COOL mode, HEAT mode and DRY mode.
  - (2) For initial power-up, temperature and fan speed will be showed as follows when entering each mode, otherwise parameters set last time will be showed;

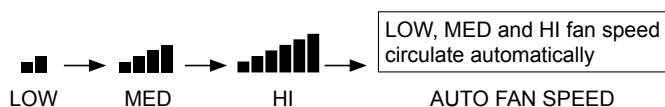
Mode	SMART	HEAT	COOL	DRY	FAN
Initial TEMP.	24°C	24°C	24°C	24°C	Setting temperature is not showed.
Mode	SMART	HEAT	COOL	DRY	FAN
Initial Fan Speed	AUTO	LOW	HI	AUTO	LOW


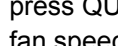
### 5. FAN Mode

- (1) During power OFF, press "HEALTH" button or "FRESH" button to enter FAN mode with low fan speed. Meanwhile, the HEALTH or FRESH icon will be showed on the screen.
- (2) Temperature is not showed in FAN mode.
- (3) Auto fan speed is not available when switching fan speed in FAN mode.

## 6. FAN SPEED Button:

(1) In other modes except for Fan mode, LOW, MED, HI and AUTO fan speed is adjustable, switching sequence is as LOW-MED-HI-AUTO-LOW.



(2) After TURBO or QUIET is set. Press TURBO button to show **TURBO** on the screen with fan speed as , then press "FAN SPEED" button to exit; press QUIET button to show **QUIET** on the screen with fan speed as , then press "FAN SPEED" button to exit. To cancel TURBO and QUIET, press TURBO and QUIET buttons respectively, **TURBO** and **QUIET** icons will disappear and the fan speed will return to the last one.

(3) This button is invalid during power OFF.

## 7. TEMP. +/- Button:

(1) This button is invalid in FAN mode;

(2) Temperature adjustment range in SMART, HEAT, COOL and DRY mode: 16 ~30°C.

(3) Press and hold "TEMP. +/-" button, the temperature changes once; long press the button, the temperature changes rapidly.

## 8. Four-side Embedment

(Available for some models):

(1) Initial position of all modes for first power on:

	SMART	HEAT	COOL	DRY	FAN
Four-side Embedment	Show all	Show all	Show all	Show all	Show all
SWING Angle	Position 3	Position 5	Position 3	Position 3	Position 3

(2) After power on, press "Four-side Embedment" button for the first time and the recycle approach is as follows: four-side simultaneous control of Four-side Embedment → Four-side Embedment 1 → Four-side Embedment 2 → Four-side Embedment 3 → Four-side Embedment 4 → Four-side simultaneous control of Four-side Embedment.



(3) When pressing "Four-side Embedment" button to select air deflector, the selected air deflector flashes. Press "Up-and-down Angle" button to adjust angle of air deflector at the moment.

## 9. Up-and-down SWING Angle:

1: Position 1; 2: Position 2; 3: Position 3; 4: Position 4;

5: Position 5; 6: Position 6 (reserved)

Recycle approach: Position 1→Position

2→Position 3 →Position 4→Position

5→AUTO→Position 1

Auto swing: 1→2→3→4→5→4→3→2→1 is showed circularly.



## 10. Right-and-left SWING Angle (Available for some models):

Recycle approach: 34 showed (Position 1)→25 showed (Position 2)→16 showed (Position 3)→1 showed (Position 4)→2 showed (Position 5)→5 showed (Position 6)


→6 showed (Position 7)→Auto swing

Auto swing approach:

1→2→3→4→5→6→5→4→3→2→1 are showed circularly.



## 11. HEALTH AIRFLOW (Available for some models):

Press "HEALTH AIRFLOW" button to show  icon on LCD display. Each air deflector of swings on four sides alternates circularly to indicate that the swing rotates to exhaust air. Meanwhile, up-and-down SWING angle shows AUTO SWING. Press it again to cancel HEALTH AIRFLOW.




## 12. SLEEP:


(1) Valid during power on.

(2) The SLEEP time is fixed to 8 hours and is not adjustable.

(3) It is invalid in FAN mode. When setting TIMER ON or TIMER ON to TIMER OFF after setting SLEEP function, once the timer setting is successful, the SLEEP function will be cancelled; after setting TIMER ON or TIMER ON to TIMER OFF, the SLEEP function cannot be set. SLEEP function can be set from TIMER OFF to TIMER ON, TIMER OFF and SLEEP function have priority in canceling the opposite side.

## 13. HEALTH:

(1) During power-on or power-OFF, press "HEALTH" button to display icon  on LCD display, and press "HEALTH" button again to cancel.

(2) During power-OFF, press "HEALTH" button to enter Fan mode, start low wind and HEALTH function, display icon .

(3) Switch among modes, and keep HEALTH function.

(4) If HEALTH function is set, power OFF and then on to stay in HEALTH mode.



## 14. ECO:

(1) Press ECO button and the display will show **ECO**.



(2) ECO is valid under all modes, it is memorized among switch of all modes.

(3) ECO function power-on or power-OFF is memorized.

## 15. Turbo/Quiet:

(1) Press button "Turbo", display icon **TURBO** on remote LCD display, display icon  of fan speed; Press button "Quiet", display icon **QUIET** on remote LCD display, display icon  of fan speed.


(2) Turbo and QUIET functions can not exist at the same time, the latter will replace the former.



(3) If Turbo function is set, press “SLEEP” button to exit turbo, which means that setting SLEEP function while canceling turbo function. At the same time, the icon  disappears and icon  is shown; if QUIET function is set at present, press button “SLEEP” while QUIET function is still kept.

(4) This function is valid under the mode of COOL or HEAT.

(5) Turbo/QUIET functions are not memorized among switch of all modes/the state of on or OFF.

#### 16. IFP:


(1) Press “IFP” button, display , IFP function is set, and press “IFP” button again to cancel.

(2) Press “Follow/Evade” button, display  that expresses following; press it again, display  that expresses evading. Press it the third time to cancel.

(3) If follow/evade functions are set, air-out angle will change with position of people, so after setting these functions, Four-side Embedment icons in all sides, up-and-down SWING and left-and-right SWING icons will disappear.

(4) If air conditioner is in the state of HEALTH airflow, follow/evade functions is set, HEALTH airflow function is cancelled, Four-side Embedment, up-and-down SWING and left-and-right SWING icons will disappear.

#### 17. FRESH:

(1) FRESH function is valid under the state of ON or OFF. When air conditioner is OFF, press “FRESH” button, display icon  on LCD display to enter Fan mode and low speed. Press “FRESH” button again, this function is cancelled.


(2) After FRESH function is set, ON or OFF functions are kept.

(3) After FRESH function is set, mode switch function is kept.

#### 18. 10°C Heating Function and °C/°F function

Press “MENU/°F” button to set 10°C Heating function and °C/°F function. 10°C Heating Function is valid only under the mode of HEAT, and it is not memorized under the state of ON or OFF.

#### 19. HEATER:

(1) When HEAT mode is chosen and  is displayed on LCD display, pressing “HEATER” button can cancel and set HEATER function.

(2) Auto mode will not start HEATER function automatically, but can set or cancel HEATER function.

#### 20. Timer:

(1) TIMER ON

- Press “TIMER ON” button, character “ON” is flashing, press “+/-” button to adjust, then press “CONFIRM” button to confirm, if “CONFIRM” button is not pressed within 10 s, TIMER ON function is cancelled.
- If time of TIMER ON is the same as that of clock at present, character “ON” is always flashing and can not be verified, it is necessary to readjust time.
- When the time of TIMER ON is end, the setting time and character “ON” disappear.

(2) TIMER OFF

- Press “TIMER OFF” button, character “OFF” is flashing, press “+/-” button to adjust, then press “CONFIRM” to confirm, if “CONFIRM” is not pressed within 10 s, TIMER OFF function is cancelled.
- If time of TIMER OFF is the same as that of clock at present, character “OFF” is always flashing and can not be verified, it is necessary to readjust time.
- When the time of TIMER OFF is end, the setting time and character “OFF” disappear.

(3) TIMER ON/OFF

- After TIMER ON/OFF is set, remote will automatically judge sequential order of ON/OFF, arrow indicates that the one performed first points to the one performed second.
- After the time of clock performed first is end, corresponding characters of timer “ON/OFF” disappear.
- If time of TIMER ON is the same as that of TIMER OFF, and can not be verified, corresponding character of the latter of setting time is always flashing, it is necessary to readjust time and confirm again.
- If time of TIMER ON/OFF is the same as that of clock at present, and can not be verified, it is necessary to readjust time and confirm again.

(4) After setting timer, display the setting of timer first and then display time all the time, when timer is active, character “ON/OFF” is always displayed.

#### 21. Button +/-:

Press button “+/-”, time will change in terms of 1 min as unit, pressing and holding the button will change quickly.

#### 22. Clock:

Press “Clock” button, “AM” or “PM” displayed at present are flashing to enter the state of clock adjustment, adjust clock and then press “CONFIRM” to confirm. It is valid under the state of ON/OFF.

#### 23. LIGHT:

No display on remote controller LCD, which is processed by indoor unit.

#### 24. RESET:

Perform one power on reset operation when RESET button is pressed.

#### 25. LOCK:

Press button Lock, display Lock symbol on LCD display, buttons on remote controller can not be used, press button Lock again to unlock.

#### 26. CODE: Function reserved.

#### 27. INQUIRE Function reserved.

## 2.3 YR-H005

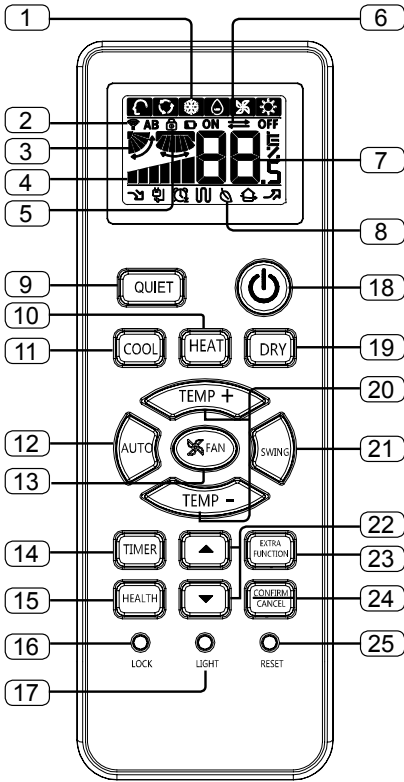


MRV	LCAC			
	Smart Power	Super Match	R410A ON/OFF	R22 ON/OFF
				√

- On/Off, Mode, Fan speed, Temperature setting, Swing
- Individual control
- Timer
- Turbo cooling / heating

## Parts and Functions

### • Remote controller



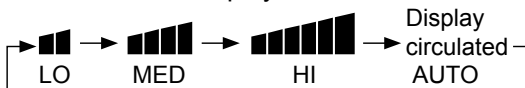
#### 1. Mode display

Operation mode	AUTO	COOL	DRY	FAN	HEAT
Remote controller					

#### 2. Signal sending display

#### 3. SWING display

#### 4. FAN SPEED display



#### 5. LOCK display

#### 6. TIMER OFF display / TIMER ON display

#### 7. TEMP display

#### 8. Additional functions display

Operation mode	QUIET	SLEEP	Supplemented electrical heating	HEALTH	TURBO
Remote controller					

#### 9. QUIET button

#### 10. HEAT button

#### 11. COOL button

#### 12. AUTO button

#### 13. FAN SPEED button

#### 14. TIMER button

#### 15. HEALTH button

#### 16. LOCK button

Used to lock buttons and LCD display

#### 17. LIGHT button

Control the lightening and extinguishing of the indoor LED display board.

#### 18. POWER ON/OFF button

#### 19. DRY button

#### 20. TEMP button

#### 21. SWING button

#### 22. HOUR button

#### 23. EXTRA FUNCTION button

Function: Vertical flap swing -- Sleeping -- Healthy airflow position 1 -- Healthy airflow position 2 -- Power -- Air sending -- A-B yard

#### 24. CANCEL/CONFIRM button

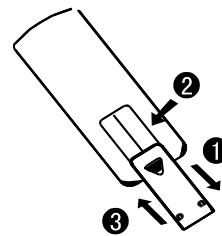
Function: Setting and cancel to the timer and other additional functions.

#### 25. RESET button

When the remote controller appears abnormal, use a sharp pointed article to press this button to reset the remote.

Note: Healthy function is not available for some units.

### • loading of the battery



#### 1. Remove the battery cover;

#### 2. Load the batteries as illustrated.

#### 2 R-03 batteries, resetting key (cylinder);

#### 3. Be sure that the loading is in line with the "+" / "-";

#### 4. Load the battery, then put on the cover again.

#### Note:

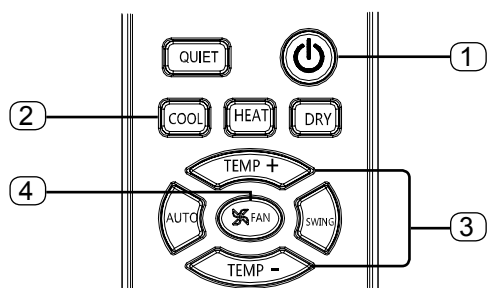
- The distance between the signal transmission head and the receiver hole should be within 7m without any obstacle as well.
- When electronic-started type fluorescent lamp or change-over type fluorescent lamp or wireless telephone is installed in the room, the receiver is apt to be disturbed in receiving the signals, so the distance to the indoor unit should be shorter.
- Full display or unclear display during operation indicates the batteries have been used up. Please change batteries.
- If the remote controller can't run normally during operation, please remove the batteries and reload several minutes later.



Hint: Remove the batteries in case won't be in use for a long period. If there is any display after taking-out, just press reset key.

## Operation

### • Base Operation



#### 1. Unit start

Press ON/OFF on the remote controller, unit starts.

#### 2. Select operation mode

button: Cooling mode,  
 button: Heating mode  
 button: Dehumidify mode

#### 3. Select temp. setting

Press / button

Every time the button is pressed, temp. setting increase 1°C, if kept depressed, it will increase rapidly.

Every time the button is pressed, temp. setting decrease 1°C, if kept depressed, it will decrease rapidly. Select a desired temperature.

#### 4. Fan speed selection

Press button. For each press, fan speed changes as follows:

Remote controller:

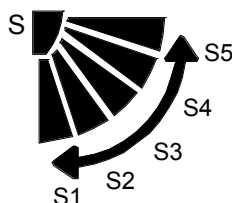


Air conditioner is running under displayed fan speed. When FAN is set to AUTO, the air conditioner automatically adjusts the fan speed according to room temperature.

Operation Mode	Remote Controller	Note
AUTO		Under the mode of auto operation, air conditioner will automatically select Cool or Heat operation according to room temperature. When FAN is set to AUTO the air conditioner automatically adjusts the fan speed according to room temperature.
COOL		
DRY		In DRY mode, when room temperature becomes lower than temp.setting+2°C, unit will run intermittently at LOW speed regardless of FAN setting.

Operation Mode	Remote Controller	Note
HEAT		In HEAT mode, warm air will blow out after a short period of the time due to cold-draft prevention function. When FAN is set to AUTO, the air conditioner automatically adjusts the fan speed according to room temperature.
FAN		In FAN operation mode, the unit will not operate in COOL or HEAT mode but only in FAN mode, AUTO is not available in FAN mode. And temp. setting is disabled. In FAN mode, sleep operation is not available.

### • Air Flow Direction Adjustment

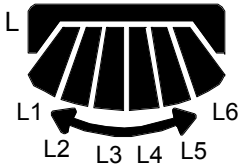


#### 1. Horizontal Flap Swing

Press button to enter horizontal flap auto swing, the icon will display position S1 -S5 cycle. Press button again, horizontal flap will stop at current position, the horizontal flap position icon will disappear.

## 2.Vertical Flap Swing

- Press button to enter vertical swing options, vertical swing icon will flash.
- Press button to enter vertical flap position setting, when setting accomplished, Press button to affirm.
- If not be affirmed in 5 seconds, the vertical flap position will not be changed.
- After vertical swing setting accomplished, press button, the function cycle: Vertical flap swing--Sleeping--Healthy airflow position 1--Healthy airflow position 2--Power--Air sending---A-B yard will to be continued.



### Note:

When restart after remote turning off, the remote controller will automatically memorize the previous set swing position.

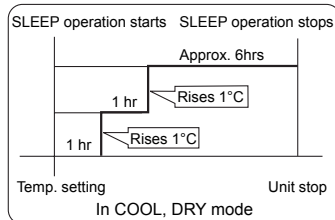
## • Sleep Operation

Press button to enter additional options, when cycle display to , will flash. And then press , enter to sleep function.

## Operation Mode

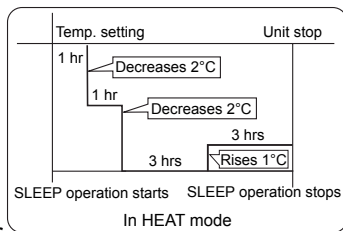
### 1. In COOL, DRY mode

1 hours after SLEEP mode starts, temp. will become 1°C higher than temp. setting. After another 1 hours, temp. rises by 1°C further. The unit will run for further 6 hours then stops Temp. is higher than temp. setting so that room temperature won't be too low for your sleep.



### 2.In HEAT mode

1 hours after SLEEP mode starts, temp. will become 2°C lower than temp. setting. After another 1 hours, temp. decrease by 2°C further. After more another 3 hours, temp. rises by 1°C further. The unit will run for further 3 hours then stops. Temp. is lower than temp. setting so that room temperature won't be too high for your sleep.



### 3.In AUTO mode

The unit operators in corresponding sleep mode adapted to the automatically selected operation mode.

### 4.In FAN mode

It has no SLEEP function.

## 4.In FAN mode

It has no SLEEP function.

### 5.Set the wind speed change when sleeping

If the wind speed is high or middle before setting for the sleep, set for lowering the wind speed after sleeping. If it is low wind, no change.

### Note:

When TIMER function is set, the sleeping function can't be set up. After the sleeping function is set up, if user resets TIMER function, the sleeping function will be cancelled; the machine will be in the state of timing-on.

## • Power/Quiet Operation

### 1. POWER Operation

When you need rapid heating or cooling, you can use this function. Press button to enter additional options, when cycle display to , will flash, and then press , enter to power function. When cancel the function, please enter additional options again and to cancel power function.

### 2.QUIET Operation

You can use this function when silence is needed for rest or reading. Press QUIET button, the remote controller will show , and then achieve to the quiet function. Press again this QUIET button, the quiet function will be cancelled.

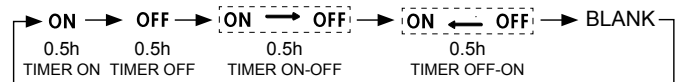
### Note:

During POWER operation, in rapid HEAT or COOL mode, the room will show inhomogeneous temperature distribution. Long period QUIET operation will cause effect of not too cool or not too warm.

## • Timer On/Off On-Off Operation

- 1.After unit starts, select your desired operation mode.
- 2.Press button to change TIMER mode. Every time the button is pressed, display changes as follows:

Remote controller:



Then select your desired TIMER mode (TIMER ON or TIMER OFF or TIMER ON-OFF). "ON "or " OFF" will flash.

3.Press / button to set time.

Press the button for each time, setting time in the first 12 hours increased by 0.5 hour every time, after 12 hours, increased by 1 hour every time.

Press the button for each time, setting time in the first 12 hours decreased by 0.5 hour every time, after 12 hours, decreased by 1 hour every time.

It can be adjusted within 24 hours.



#### 4. Confirm timer setting

After adjust the time, press  button and confirm the time ON or OFF button will not flash any more.

#### 5. Cancel timer setting

Press the timer button by times until the time display eliminated.

#### Hints:

After replacing batteries or a power failure happens, time setting should be reset.



According to the Time setting sequence of TIMER ON or TIMER OFF, either Start-Stop or Stop-Start can be achieved.

### • Healthy airflow Operation

#### 1. Press to starting



Setting the comfort work conditions.

#### 2. The setting of healthy airflow function

Press  button to enter additional options, Press this button continuously, the louvers location will cycle between in the following three locations, to choose the swing location what you needed, and then press  button to confirm.



#### 3. The cancel of the healthy airflow function

Press  button to enter additional options, Press this button continuously, the louvers location will cycle between in the following three locations again, and then press  button to cancel.


#### Notice:

Do not direct the flap by hand. Otherwise, the grille will run incorrectly. If the grille is not run correctly, stop for a minute and then start, adjusting by remote controller.

#### Note:

1. After setting the healthy airflow function, the position grill is fixed.

2. In heating, it is better to select the  mode.

3. In cooling, it is better to select the  mode.

4. In cooling and dry, using the air conditioner for a long time under the high air humidity, condensate water may occur at the grille.

## 2.4 YL-HE

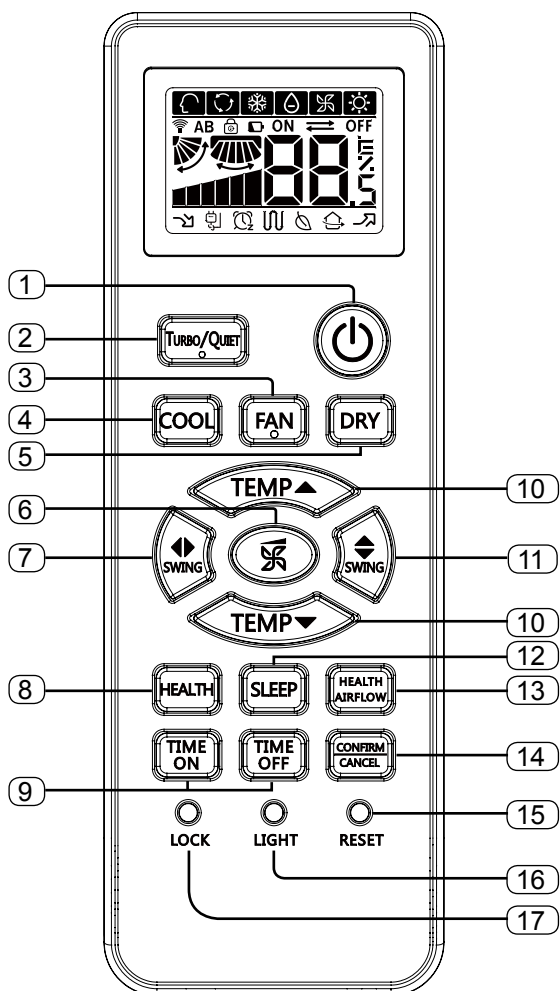


MRV	LCAC			
	Smart Power	Super Match	R410A ON/OFF	R22 ON/OFF
		√	√	√

- Individual control
- Cooling only

## Parts and Functions

### • Buttons of the remote controller

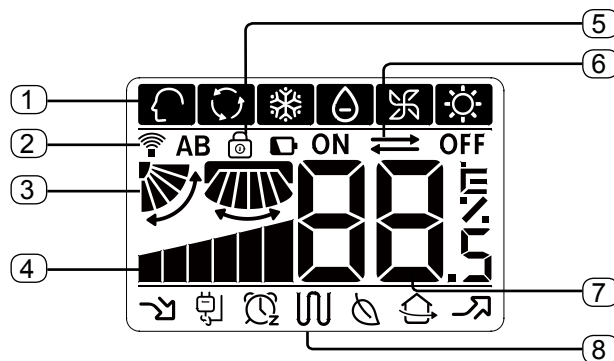


1. POWER button
  2. TURBO/QUIET button
  3. FAN button
  4. COOL button
  5. DRY button
  6. FAN SPEED button
  7. SWING LEFT/RIGHT button
  8. HEALTH button
  9. TIME OFF/ON button
  10. TEMP button
  11. SWING UP/DOWN button
  12. SLEEP button
  13. HEALTH AIR FLOW button
  14. CANCEL/CONFIRM button
- Function: Setting and cancel to the timer
15. RESET button

When the remote controller appears abnormal, use a sharp pointed article to press this button to reset the remote.

16. LIGHT button
17. LOCK button

### • Display of the remote controller



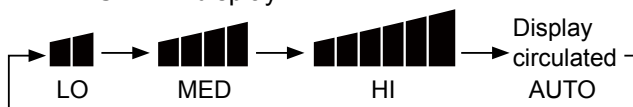
#### 1. Mode display

Operation mode	COOL	DRY	FAN
Remote controller			

#### 2. Signal sending display

#### 3. SWING display

#### 4. FAN SPEED display



#### 5. LOCK display

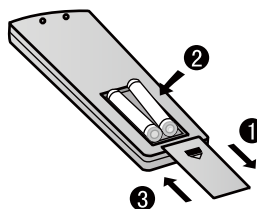
#### 6. TIMER OFF display TIMER ON display

#### 7. TEMP display

#### 8. Additional functions display

Operation mode	QUIET	SLEEP	HEALTH	TURBO
Remote controller				

### • Loading of the battery



1. Remove the battery cover;
2. Load the batteries as illustrated. 2 R-03 batteries, resetting key (cylinder);
3. Be sure that the loading is in line with the "+" / "-";
4. Load the battery, then put on the cover again.

**Note:**

- The distance between the signal transmission head and the receiver hole should be within 7m without any obstacle as well.
- When electronic-started type fluorescent lamp or change-over type fluorescent lamp or wireless telephone is installed in the room, the receiver is apt to be disturbed in receiving the signals, so the distance to the indoor unit should be shorter.
- Full display or unclear display during operation indicates the batteries have been used up. Please change batteries.
- If the remote controller can't run normally during operation, please remove the batteries and reload several minutes later.

**• Air Flow Direction Adjustment**

1. Status display of air flow

Vertical flap

Pos.1 (Auto swing)

Initial state

Pos.2 No initial state displayed on remote controller, the

vertical flap will be fixed on the current position

2. Left and right air flow adjustment

For each press of button, remote controller displays as follows :

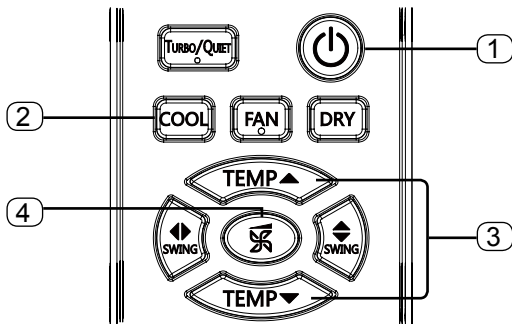
remote controller:

Pos.1	Pos.2	Pos.3	Pos.4	Pos.5	Pos.6

**Operation**

NO. 0150519130

**• Base Operation**



1. Unit start

Press ON/OFF on the remote controller, unit starts.

2. Select operation mode

COOL button: Cooling mode

FAN button: Fanning mode

DRY button: Dehumidify mode

3. Select temp. setting

Press / button

Every time the button is pressed, temp. setting increase 1°C, if kept depressed, it will increase rapidly.

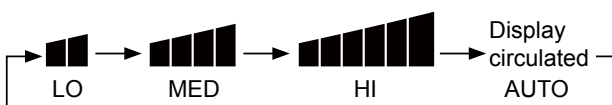
Every time the button is pressed, temp. setting decrease 1°C, if kept depressed, it will decrease rapidly.

Select a desired temperature.

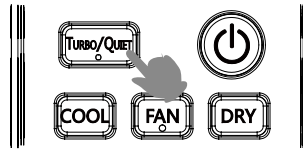
4. Fan speed selection

Press FAN button. For each press, fan speed changes as follows:

Remote controller:



**• TURBO/QUIET Operation**



When you need fast cool or fast dehumidify function, you can choose the Turbo function; when you sleep, read, you can choose Quiet function



Press the button, you can switch the "Turbo" and "Quiet" function easily. Every press, the remote controller will switch as below:

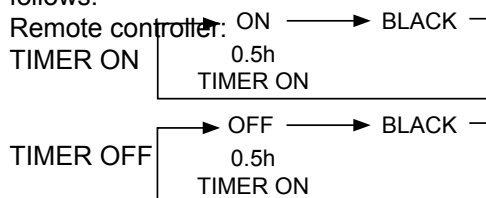


When running in Turbo, the fan speed is the highest, when running in Quiet, the fan speed is super slow.

## • Timer On/Off On-Off Operation

**1. After unit starts, select your desired operation mode.**

**2. Press  /  button to change TIMER mode.** Every time the button is pressed, display changes as follows:



Then select your desired TIMER mode (TIMER ON or TIMER OFF). "ON" or "OFF" will flash

**3. Press  /  button to set time.**

Press the button for each time, setting time in the first 12 hours increased by 0.5 hour every time, after 12 hours, increased by 1 hour every time.


**4. Confirm timer setting**

After adjust the time, press  button and confirm the time ON or OFF button will not flash any more.

**5. Cancel timer setting**

Press the timer button by times until the time display eliminated.

### Note:

1. After setting the healthy airflow function, the position grill is fixed.
2. In cooling, it is better to select the  mode.
3. In cooling and dry, using the air conditioner for a long time under the high air humidity, condensate water may occur at the grille.

### Hints:

- After replacing batteries or a power failure happens, time setting should be reset.
- According to the Time setting sequence of TIMER ON or TIMER OFF, either Start-Stop or Stop-Start can be achieved.

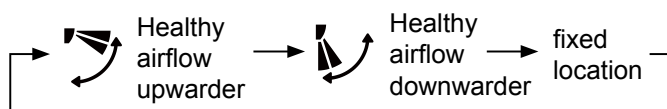
## • Health airflow Operation

1. Press  to starting

Setting the comfort work conditions.

2. The setting of healthy airflow function

Press button to select "Healthy airflow", the remote controller will switch as below:



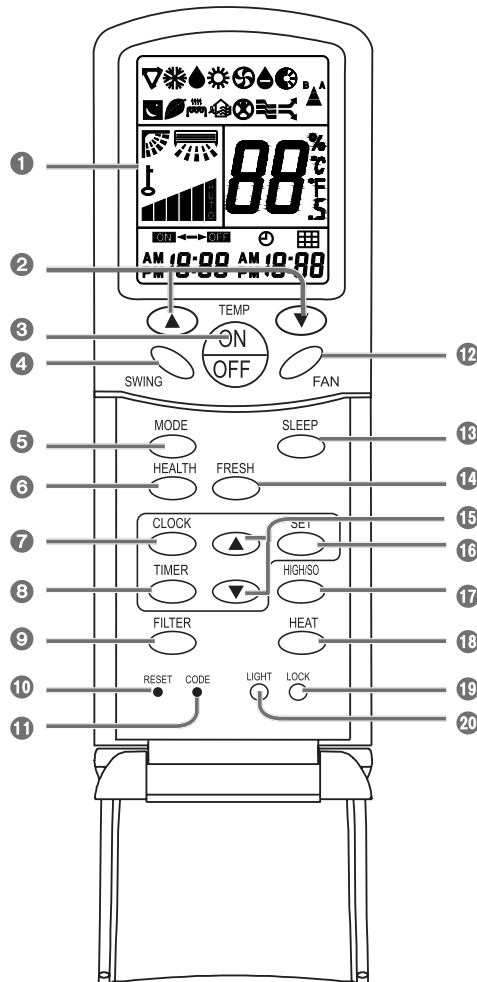
Notice: Do not direct the flap by hand. Otherwise, the grille will run incorrectly. If the grille is not run correctly, stop for a minute and then start, adjusting by remote controller.

2.5 YR-H71



## Parts and functions

### Remote Controller



- ① LCD display
- ② TEMP Setting Button
- ③ Power ON/OFF Button
- ④ SWING Button
- ⑤ Operation MODE Button
- ⑥ HEALTH Button
- ⑦ CLOCK Button
- ⑧ TIMER Button
- ⑨ FILTER Button
- ⑩ RESET Button

Press this button by using a sharp article to resume the correct operation of the remote controller in case of need, i.e. for example in case of malfunctions due to electromagnetic disturbance.

**⑪ CODE Button**

Used to select Code A or B, Normally at Code A. As you can't control the indoor unit, please change the Code to B.

- ⑫ FAN Button
- ⑬ SLEEP Button
- ⑭ FRESH Button
- ⑮ HOUR Adjustment
- ⑯ SET Button
- ⑰ HIGH/SO Button
- ⑱ HEAT Button
- ⑲ LOCK Button
- ⑳ LIGHT Button

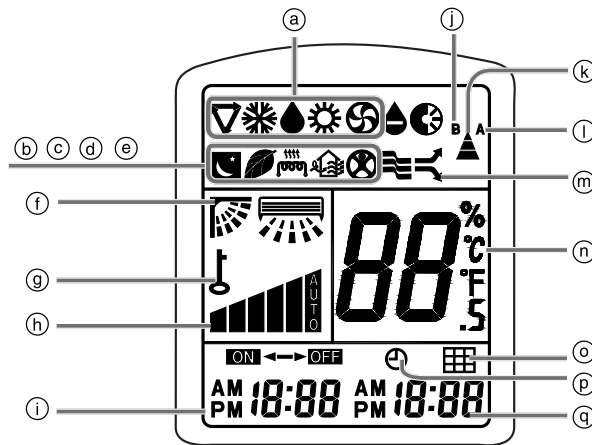
Used to set clock and timer setting

Used to lock operation button and LCD display contents: by pressing this button, other buttons comes out of function and lock state display appears; if you press it again, lock state will be no more active and lock state display will disappear.

**Note**

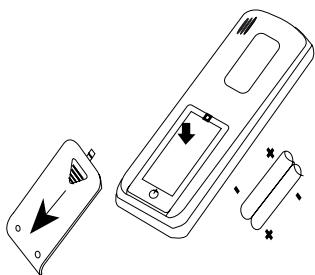
- Single cooling air conditioner does not have the displays and functions related to heating.
- For some units, the function HEALTH(⑥), FILTER(⑨), FRESH(⑭), HIGH/SO(⑰), HEAT(⑱), LIGTH(⑳) are optional.
- HIGH/SO button : This button is active in Cooling/Heating mode, the fan speed is in AUTO mode after pressing it and “high function” will be automatically cancelled after 15 minutes running.

• LCD display



- |  |  |
|--|--|
| ③ Operation Mode Display               | ⑱ Code B of controller's state                                 |
| ④ SLEEP State Display                  | ⑳ Signal Sending Display                                       |
| ⑤ Health Display                       | Ⓛ Code A of controller's state<br>Code A is used for this unit |
| ⑥ Auxiliary Electrical Heating Display | Ⓜ High/So Run Display  |
| ⑦ Fresh Display                        | Ⓨ Temperature Display  |
| ⑱ Auto Swing Display                   | ⓞ Filter Display   |
| ⑨ Lock State Display                   | Ⓟ Timer Display  |
| ⑱ Fan Speed Display                    | ① Time Display   |
| ⑱ Timer On Display                     |  |

• Battery loading



- 1 Remove the battery compartment lid. Slightly press and disengage the battery compartment lid marked with and then hold the remote controller by the upper section and then remove the battery compartment lid by pressing in the direction of the arrow as shown in the figure.
- 2 Loading the battery  
Ensure that batteries are correctly placed in the compartment as required for positive and negative terminals.
- 3 Replacing the battery compartment lid  
The battery compartment lid is reinstalled in the reverse sequence.




#### 4 Display review

Press the button to see if batteries are properly fitted. If no display appears, refit the batteries.

Confirmation indicator:

If no indication is displayed after press ON/OFF button, reload the batteries.

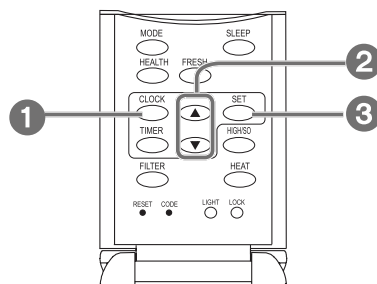
**Caution** • If the remote controller does not operate as designed after fitting new batteries of the same type, press the Reset button (marked ) with a pointed article.

**Note** • It is recommended that the batteries be removed from the compartment if the remote controller is not used for an extended period.  
 • The remote controller is programmed for automatic test of operation mode after the batteries are replaced. When the test is conducted, all icons will appear on the screen and then disappear if the batteries are properly fitted.  
 • When throw away the waste batteries, please perform in accordance with the local regulation.

#### • Remote controller operation

- When in use, direct signal transmission head to the receiver placed on the indoor unit
- The distance between the remote controller and the receiver should be max 7m and there should be no obstacle between them.
- Do not throw the remote controller; prevent it from being damaged.
- When operating the remote controller in an area where electronically controlled lights are installed or wireless handsets are used, please move closer to the indoor unit as the function of the remote controller might be affected by signals emitted by the above mentioned equipments.

#### • Clock Set

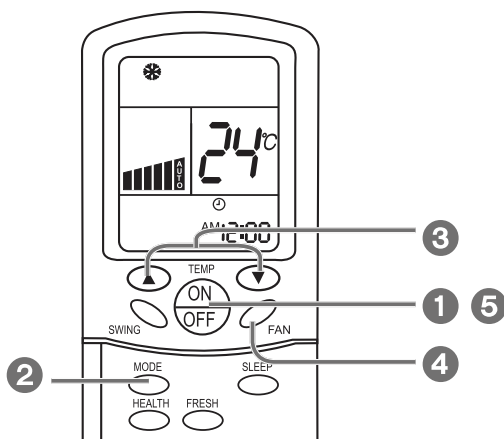


When unit is started for the first time and after replacing batteries in remote controller, clock should be adjusted as follows:

- 1 Press CLOCK button, clock indication of "AM" or "PM" flashes.**
- 2 Press ▲ or ▼ to set correct time. Each press will increase or decrease 1 min. If the button is kept pressed, time will increase or decrease quickly.**
- 3 After time setting is confirmed, press SET, "AM" or "PM" stop flashing, while clock starts working.**

## Operation

- AUTO, COOL , HEAT and DRY Operation

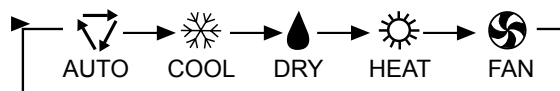


### 1 Unit start

Press ON/OFF button, unit starts.  
Previous operation status appears on LCD  
(except for  
TIMER, SLEEP and SWING setting)

### 2 Select operation mode

Press MODE button. At each press, operation mode changes as follow:  
Code A:



Then select AUTO fun or select COOL operation or  
select DRY operation or select HEAT operation

### 3 Temperature setting

Press TEMP button

- ▲ Every time the button is pressed, temp. setting increases 1°C; if the button is kept pressed, temp. setting will increase quickly.
- ▼ Every time the button is pressed, temp. setting decreases 1°C; if the button is kept pressed, temp. setting will decrease quickly.

Set proper temperature

### 4 Adjust FAN button

Press FAN button. At each press, fan speed changes as follows:  
Code A:



Air conditioner will run at the selected fan speed.

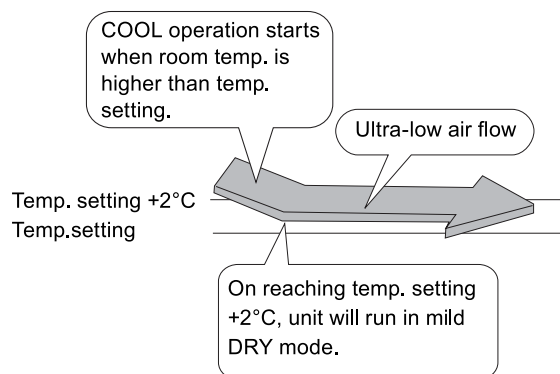
### 5 Unit stop

Press ON/OFF button, unit stops.

In FAN mode, the temperature setting is not displayed on LCD.

In DRY mode, when room temperature becomes 2°C higher than temperature setting, unit will run intermittently at LOW speed regardless of FAN setting. When room temperature is lower than temperature setting, unit will only run FAN operation.

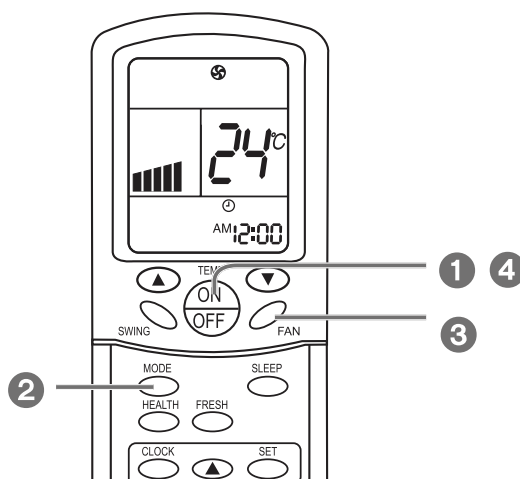
In HEAT mode, warm air blow out after a short period of time due to cold-draft prevention function.



**Note**

- When the power is on after blackout, the unit will return to the former state if compensation function is set. Otherwise, it will stop. When restarting the unit, press "ON/OFF" switch on remote controller.

• Fan Operation (Only for code A)

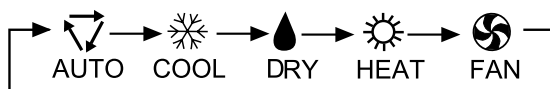


**1 Unit start**

Press ON/OFF button to start your air conditioner. Previous operation status appears on LCD (except for TIMER, SLEEP, and SWING setting).

**2 Select operation mode**

Press MODE button. At each press, operation mode changes as follows:



Then select FAN

**3 Adjust fan speed**

Press FAN button. At each press, fan speed changes as follows:



Air conditioner will run at the selected fan speed. When in AUTO mode, unit will adjust fan speed according to room temperature automatically.

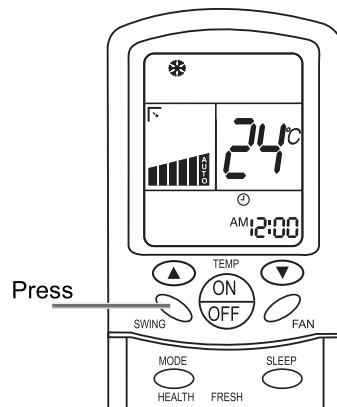
**4 Unit stop**

Press ON/OFF button to stop unit.

About FAN mode

When the air conditioner runs in FAN mode, it is not possible to select AUTO FAN or to set temperature.

- Adjusting air flow direction



## AUTO SWING

### Press SWING button

Up and down airflow varies upwards and downwards. Left and right airflow varies left and right sides. When the automatic swing louver moves to the proper angle, press SWING button can fix the airflow direction.

- Always use SWING button on the remote controller to adjust flaps. Adjusting them by hand may result in air conditioner's abnormally running.
- In COOL or DRY mode, do not leave the louver in downward position for a long time, as the water vapor close to the grill may condense and water may drop from the air conditioner.
- Please carefully set temperature when children, old or infirm people use the air conditioner.
- In case of great humidity, If the vertical flaps are completely turned towards left or right, the louver will drop water.
- Never adjust the louver directly by hand, as this could make it work abnormally. If the louver work abnormally, stop unit, restart and adjust the louver by remote controller.

After unit stops:

Displays on the LCD disappear. All indicators on the indoor unit go out. Swing louver automatically close the air outlet.

#### Hints

- As in COOL mode air flows downwards, adjusting airflow horizontally will be much more helpful for a better air circulation.
- As in HEAT mode air flows upwards, adjusting airflow downward will be much more helpful for a better air circulation.
- Be careful not to catch a cold when cold air blows downwards directly.

### • Sleep Function

Before going to bed you can press down the Sleep button and the air conditioner will run so as to make you sleep more comfortably.

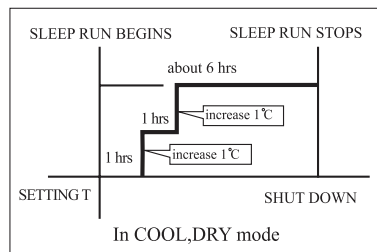
Before using this function, the clock must be set.

Use of SLEEP function

After the unit's start, set running mode and then press SLEEP button once to make the air conditioner have the previous-set sleep time (first power-on is "1h"). The sleep symbol will appear. Press time button▲/▼: you can choose the time in 1~8 hours. Each time the button is pressed, the time increases/ decreases 1 hour: "xh" and "OFF" indications appears on the display.

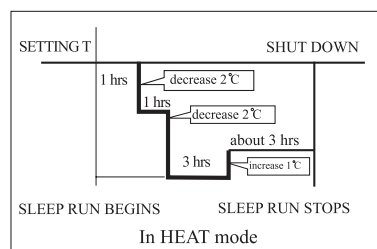
## • Operation mode

### ■ In COOL,DRY mode



One hour after sleeping operation start, the temperature is 1°C higher than the setting one. After another hour, temperature rises 1°C: sleep run continuously for another 6 hours and then stops. The actual temperature is higher than the setting one which is to prevent from being too cold to your sleep.

### ■ In HEAT mode



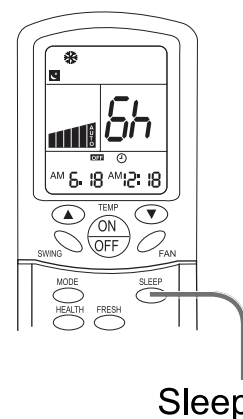
One hour after sleeping operation start, the temperature is 2 °C lower than the setting one. After another hour, temperature decreases by 2 °C more. Temperature will automatically rise by 1 °C after another 3 hours' continuous operation and keep running for another 3 hours. The actual temperature is lower than the setting one which is to prevent from being too hot to your sleep.

### ■ In AUTO mode

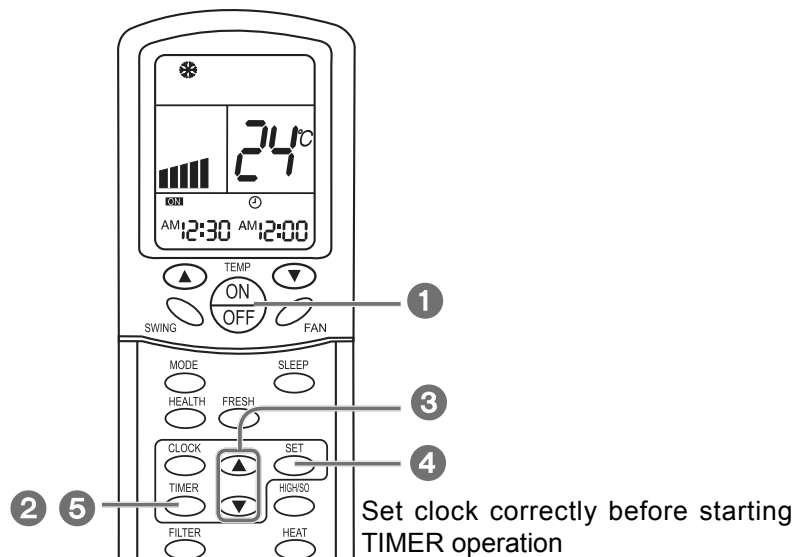
The air conditioner will run in corresponding sleep operation according to the automatically selected operation mode.

#### Note

- After setting SLEEP function, it is not possible to set clock.
- If set-sleep time does not reach 8 hours, unit will automatically stop operation after set time is reached.
- Set "TIMER ON" or "TIMER OFF" in COOL, DRY mode function first, then set SLEEP. After set SLEEP function, the TIMER function cannot be set.



## • Timer ON/OFF Function



### 1 Unit start

After unit start, select your desired operation mode (operation mode will be displayed on LCD)

### 2 TIMER mode selection

Press TIMER button to change TIMER mode. Every time the button is pressed, display changes as follows:  
Remote controller:



Then select TIMER mode as needed (TIMER ON or Timer OFF).

Now **ON** or **OFF** will flash.

### 3 TIMER setting

Press time adjust buttons ▲/▼

Every time the button is pressed, time increases 10 minutes.

If the button is kept pressed, time will changes quickly.

Every time the button is pressed, time decreases 10 minutes.

If the button is kept pressed, time will change quickly .

It can be adjusted within 24 hours at will.

### 4 Confirm setting

After setting correct time, press SET button to confirm time. Now **ON** or **OFF** stop flashing.

Time displayed: unit starts or stops at X hour X min(TIMER ON or TIMER OFF)

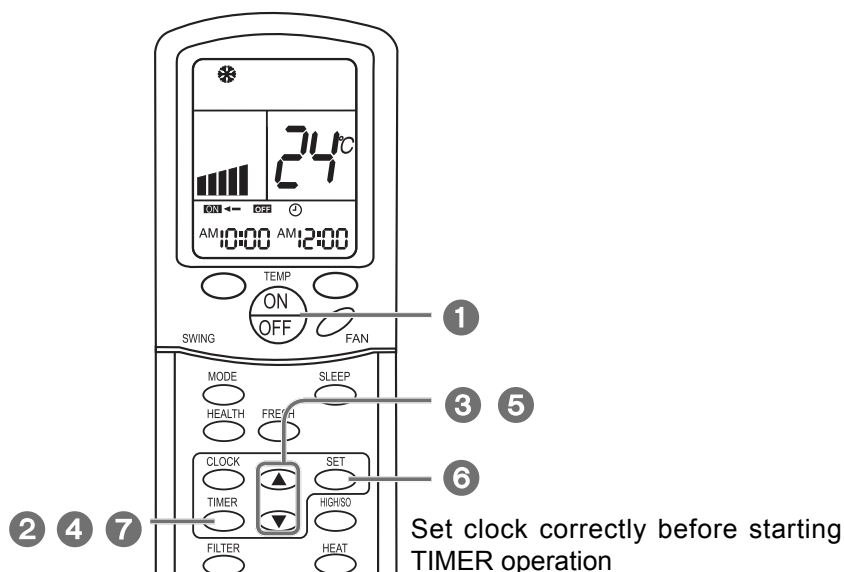
### 5 Cancel TIMER mode

Just press TIMER button several times until TIMER mode disappears.

#### Hints

- After replacing batteries or if a power failure occurs, TIMER setting must be reset.
- Remote controller has memory function. When you use TIMER mode next time, just press SET button after mode selection if timer setting is the same as the previous one.

## • Timer ON/OFF Function



### 1 Unit start

After unit start, select your desired operation mode (operation mode will be displayed on LCD)

### 2 TIMER mode selection

Press TIMER button on the remote controller to change TIMER mode. Every time the button is pressed, display of TIMER mode changes as follows:



Then select TIMER ON-OFF mode. **ON** will flash.

### 3 TIMER setting for TIMER ON

Press time adjust buttons ▲/▼

- ▲ Every time the button is pressed, time increases 10 minutes.  
If the button is kept pressed, time will change quickly.
- ▼ Every time the button is pressed, time decreases 10 minutes.  
If the button is kept pressed, time will change quickly .  
It can be adjusted within 24 hours at will.  
AM refers to morning and PM refers to afternoon.

### 4 Timer confirming for TIMER ON

After setting correct time, press TIMER button to confirm time. Now **ON** stops to flash, while **OFF** starts flashing.

### 5 Timer setting for TIMER OFF

Press time button ▲/▼ and follow the same procedures in "Time setting for TIMER ON"

### 5 Timer confirming for TIMER OFF

After time setting, press SET button to confirm time. **OFF** stops to flash.  
Time displayed: unit starts or stops at X hour X min.

### 7 Cancel TIMER mode

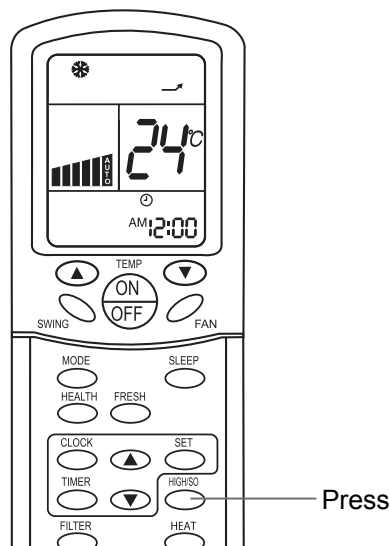
Just press TIMER button several times until TIMER mode disappears.  
According to the time setting sequence of TIMER ON and TIMER OFF, either start-stops or stops-start can be realized.  
If the time setting of TIMER ON is the same as TIMER OFF, TIMER ON-OFF function cannot be set.

## • "High mode" Operation

### Outline of operation in "High Mode"


This function is suitable when the set temperature must be reached in the shortest delay.

The button "HIGH/SO", referred to this function, is effective in Cooling/Heating mode (not in Auto/Dry/Fan modes).




#### ■ ON

##### Press the HIGH/SO button once

The indication  appears on the display of the remote controller and operation in "High Mode" starts. The AUTO fan speed is automatically set and the corresponding indication is also displayed. In this mode, fan speed can't be adjusted.

#### ■ OFF

##### Press the HIGH/SO button twice

If the button is pressed once, the indication  is displayed on the remote controller. If you press the button once again, the indication disappears, regular operation is restored and fan speed goes back to the mode set before "High Mode" operation.

#### Notice

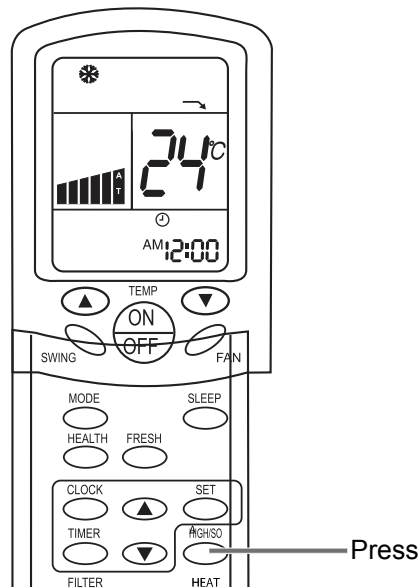
- When the air conditioner is operating in "High Mode", unevenness of room air temperature may occur due to the intensive operation in a short time.
- Anyway, operation in "High Mode", does not last for more than 15 minutes, then regular operation is automatically restored.



- "Soft mode" Operation


### Outline of operation in "Soft Mode"

Operation in "Soft Mode", more silent, is suitable when noises should be reduced, e.g. for reading or sleeping. The button "HIGH/SO", referred to this operation, is effective in Cooling/Heating mode (not in AUTO/Dry/Fan modes).




- ON

#### Press the HIGH/SO button twice

The indication  appears on the display of the remote controller and operation in "Soft Mode" starts. The AUTO fan speed is automatically set and the corresponding indication is also displayed

- OFF

#### Press the HIGH/SO button twice

If the button is pressed once, the indication  is disappears from the remote controller's display. If you press the button once again, regular operation is restored and fan speed goes back to the mode set before "Soft Mode" operation.

## 3. Wired controller

### 3.1 YR-E17



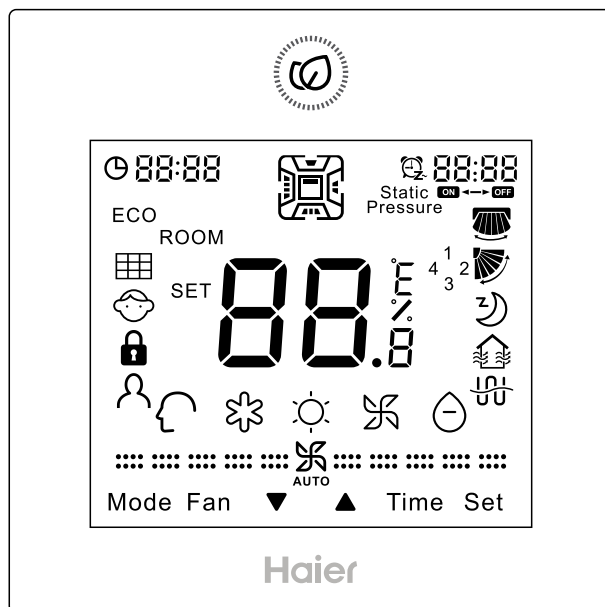
MRV	LCAC			
	Smart Power	Super Match	R410A ON/OFF	R22 ON/OFF
√	√	√	√	

- On/Off, Mode, Fan speed, Temperature setting, Swing.
- Individual & Group control (Max. 16 indoor units)
- Simple and Smart design, 86\*86\*13.05mm
- Touch button with back light
- Timer/ Clock
- Easy installation



## Parts and Functions

### Interface Display



#### Key



ON/OFF



Adjusting key for temperature, clock, timer, sleeping adjustment, temp. compensation and energy saving;  
Inquiring key for detail parameter and malfunction inquiry;  
Switching key for function switch.

The adjusting accuracy of temperature is 0.5°C. If energy saving mode is not set, the adjusting range is from 16°C to 30°C. If energy saving mode is set, the lowest temperature limit of cooling/dry and the highest temperature limit of heating are decided by the setting of the chip, the default cooling/dry temperature is 23°C, and the default heating temperature is 26°C.

Note:

- If the dip switch Sw2 is “on”, it displays the ambient temp., as well as when powered off. From power off to power on, mode switching and set temp. adjustment, it flashes to display SET icon and statically displays the set temp.. And then statically displays the ambient temp. and ROOM icon after 3 seconds. In energy saving mode and temp. compensation mode, the adjusting step is 1°C a time.
- If using Fresh Air unit, set temp. cannot be adjusted. If there is no Central/Lock set, the temp. will be fixed at 18°C in cooling and 22°C in heating. The Up/Down key will not display in normal state, but will display and valid in timer setting, function selection, unit shift in malfunction inquiry, parameter shift in parameter check, unit No. setting, sleeping time adjustment, etc.

⌚ 24-hour, press ▼ once to minus one minute. Keep pressing, minus 2 minutes in 1 second's pressing, then 10 minutes in 5 seconds. The time will keep decreasing at the pace of 10 minutes a time in 10 seconds. Vice-versa. Press SET to confirm or it will turn back to the previous state automatically in 10s.

#### Mode

Press this key to execute mode switch. For detailed information, please refer to mode setting.

Note: If using Fresh Air unit, default 3 modes will circulate from cooling→heating→fan→cooling.

## Fan

Pressing this key, fan speed will be changed in sequence as follows: (Low) → (Medium) → (High) → (Auto) → (Low)

Note: Auto fan will be changed in sequence as follows:

→ → →

Pressing this key, fan speed will be changed in sequence as follows (Only valid for parts of models):

(Breeze) → (Low) → (Medium) → (High) → (Super) → (Auto) → (Breeze)

Auto fan circulation:

(Breeze) → (Low) → (Medium) → (High) → (Super)

There is no auto fan in fan mode; The fan icon will flash when adjusting the fan speed. It will statically display after the adjustment.

Note: If using Fresh Air unit, fan will be in auto fan and cannot be adjusted. If press FAN key, fan icon and FFFF on the

top-right corner will flash, prompting fan speed cannot be adjusted, and will statically display after 3s. Fresh Air unit fan speed will be controlled automatically by indoor unit and wired controller will always display auto fan.

## Time

Timer ON, Timer OFF, Timer ON/OFF.

## Set

Press this key to enter function circulation. If it is the four-way cassette model, press Set key for 5s to enter function circulation.

1. Press to select the functions in sequence as follows:

(Only when Left/Right swing is valid) → (Only when Up/Down swing is valid) → → (ventilation function) → (reserved function) → ECO → (When it's time for filter cleaning, this icon will involve in circulation) → (the second 8 of 88.8 in the temp. display area displaying A, only valid for part of models) → (the second 8 of 88.8 in the temp. display area displaying B, only valid for part of models) → (motion sensing, only valid for part of models) → 10°C heating function (this function only works in the heating mode, only valid for part of models) → health airflow up (Only valid for part of models) → health airflow down (Only valid for part of models)

2. Press to select the functions in sequence as follows:

health airflow down (Only valid for part of models) → health airflow up (Only valid for part of models) → 10°C heating function (this function only works in the heating mode, only valid for part of models) → (motion sensing, only valid for part of models) → (the second 8 of 88.8 in the temp. display area displaying B, only valid for part of models) → (the second 8 of 88.8 in the temp. display area displaying A, only valid for part of models) → (When it's time for filter cleaning, this icon will involve in circulation) → ECO → (reserved function) → (ventilation function) → → (Only when Up/Down swing is valid) → (Only when Left/Right swing is valid)

3. Press **Set** to confirm function selected. If there is function selected, press **Set** can cancel this function.

Note: The Left/Right swing is valid only after the dip switch is set, the filter icon is shown only after the filter requires cleaning.

## Icon

	Clock; Parameter setting/inquiry; Malfunction display; Mode setting.
	Timer ON/OFF: Sleeping; Parameter setting/inquiry; Malfunction display.
	ROOM/SET temp. and humidity display, each step is 0.5°C . For example, if the temp. is 25°C, it will display 25.0°C. Humidity display function is reserved.
<b>ECO</b>	Energy Saving, This icon will be displayed only when energy saving function is set.
	Filter Cleaning.
	Child Lock. This icon will be displayed only when child lock function is set.
	Lock/ Central
	Motion Sensing (Only valid for part of models).
	Left/Right Swing. This icon is displayed in swing mode; no display without swing mode.
	Up/Down Swing. This icon is displayed in swing mode; no display without swing mode.
	Sleeping. This icon is displayed when setting the sleeping, and left time of sleeping is displayed by 88:88
	Heat Reclaim Ventilation, This icon is displayed when setting the heat reclaim ventilation.
	Electrical Heating. This icon will display when electrical heating is set on DC wired controller.

	Intelligent Mode.		
	Cooling Mode.		Heating Mode.
	Fan Mode.		Dry Mode.
	Breeze Fan Speed (Only valid for part of models)		
	Low Fan Speed.		
	Medium Fan Speed.		
	High Fan Speed.		
	Super Fan Speed (Only valid for part of models)		
<p>If the fan speed is set in auto fan, it will change in the following sequence: Breeze(Only valid for part of models) →Low→Medium→High→Super (Only valid for part of models), AUTO icon will display simultaneously.</p>			

• Operation

**Dip Switch Interpretation ( for AC )**

DIP switch	On/Off station	Function	Default setting
Sw1	On	Slave wired controller	Off
	Off	Master wired controller	
Sw2	On	Ambient temp. display on	Off
	Off	Ambient temp. display off	
Sw3	On	Collect ambient temp. from PCB of indoor	Off
	Off	Collect ambient Temp. from wired controller	
Sw4	On	Non-volatile memory invalid	Off
	Off	Non-volatile memory valid	
Sw5	On	Old protocol	Off
	Off	Self adaption	
Sw6	On	HRV is included in the system	Off
	Off	HRV is not included in the system	
Sw7	On	Model with Up/Down and Left/Right swing	Off
	Off	Model with Up/Down swing	
Sw8	On	Fresh Air unit	Off
	Off	General unit	

**Difference between the Function of the Master Wired Controller and Slave Wired Controller**

Comparison item	Master wired controller	Slave wired controller
Function	All functions are available	1. ON/OFF, Mode, Fan Speed, Temp. Setting, Swing, Energy Saving, Clock function, Heat Reclaim Ventilation function, Mode Setting, Screen Saving and Child Lock are available 2. Cancel the filter cleaning icon 3. Look up the detailed parameter and malfunction code

**Initialization**

(1) The wired controller will display all the icons after powering on or reset, then get into the initializing process. The controller will display in sequence as follows: 88:88 (the top-left corner) → 88:88 (the top-right corner) → 88.8 → 88:88 (the top-left corner), the green LED flashes all the time until the initialization ends.

(2) If the wired controller can't be communicated with the indoor PCB normally after powering on, the initialization will be finished in 4 minutes, and then the communication malfunction can be checked from the malfunction inquiry function.

**Screen Saving**

(1) In the state of off and non screen saving, keep pressing Time and ▼ for 5s to set screen saving time, which will be shown after the top-right colon 88 statically. Press Up/Down key to adjust screen saving time and press Set key to confirm.




(2) Screen saving time should be 0s(backlight always on), 15s, 30s, 60s, default value is 15s. If it is not the first time of entering, it will display the screen saving time adjusted last time.

(3) In the process of changing screen saving time, press ON/OFF key to quit screen saving time setting function, it will recover to screen saving time before adjustment and start-up the unit.











Note:

When controlling Fresh Air unit, the controller main interface will not display Up/Down key in normal state. When in screen saving setting, press Time key first to display Up/Down key at the main interface, and then press together Time and Down key to enter screen saving time setting.

## Clock Function


- (1) 24-hour system is used, and at first time of powering on, it will display default 12:00.
- (2) When first powering on wired controller,  12:00 will be displayed on the wired controller interface, clock time can be adjusted within 10s. At the same time, clock icon  and minute-place of time will flash, meaning the current time can be adjusted.
- (3) Press Time key for 5s to enter clock setting function. It will show  12:00 after first powering on (if not first time of powering on, clock time is the memorized time), with clock icon and minute-place flashing, meaning current time can be adjusted.
- (4) Press Time key to shift the hour place and the minute place. After adjustment the time, press set key to confirm.
- (5) In the process of time adjustment, if there is no operation for 10s, it will quit and restore previous state.
- (6) In the process of time adjustment, press ON/OFF key to quit clock setting function and execute turning on/off operation at the same time.
- (7) When setting timer or sleeping function, clock time cannot be adjusted. If press Time key for 5s to enter clock adjustment, clock icon and clock time will flash indicating time cannot be adjusted.

## Timer Function

- (1) Timer mode setting: Timer ON, Timer OFF, Timer ON/OFF.
- (2) Default: Timer ON is  8:00, Timer OFF is  12:00.
- (3) Precision: The time precision is 1 minute. Timer clock is based on the current clock time; the adjustment is the same as clock time.
- (4) Press Time key, the timer function circulation is as follows:
  -  8:00 ON and the Hour position are flashing→
  -  8:00 ON and the Minute position are flashing→
  -  12:00 OFF and the Hour position are flashing→
  -  12:00 OFF and the Minute position are flashing→
  -  8:00 ON and the Hour position are flashing→
  -  8:00 ON and the Minute position are flashing→
  -  12:00 OFF and the Hour position are flashing→
  -  12:00 OFF and the Minute position are flashing→ the timer icon will disappear.
  - The hour or minute position is flashing, press ▼▲ to adjust the timer, Keep pressing to accelerate the adjusting speed, then Set to confirm the setting.
  - The controller will judge the order of timer on and off and use the arrow to show the order. First ON then OFF:ON→OFF, First OFF then ON:ON ←OFF.
  - The ON/OFF button has no affection on timer setting. Under power off state, the Time key is valid.

## Timer Setting Cancellation

- (1) If there is no Time key related operation for 10s, this setting will be cancelled and the timer will come back to the previous state.
- (2) Press Time key, until the timer icon disappear, the timer function will cancel.
- (3) Relation to other buttons when timer is set.

Press the Mode key or Fan key to exit the current setting, press them again to operate the function accordingly; Press the  (ON/OFF) key can exit the timer setting and power ON/OFF directly. If there is a timer before, the wired controller will operate by following the previous setting. If not, the wired controller will have no timer operation.

## Swing

- (1) If Sw5 is on, only the Up/Down swing will be involved in function circulation. At this time SW7 is invalid.
- (2) If Sw5 is off, swing type can be set by Sw7, when Sw7 is off, only Up/Down swing valid, when Sw7 turns on, Up/Down and Left/ Right swing valid. Only Up/Down swing is default.
  - If Sw7 is off (default): only Up/Down swing is available.
  - Press SET key to enter function circulation, Up/Down swing icon flashing, then press SET key again to confirm with swing icon statically displaying. If swing function is set, execute the above operation to cancel.
  - If Sw7 is on: Up/Down swing and Left/Right swing are available.
  - Press SET key to enter function circulation, Left/Right swing icon flashing, then press Up/Down key to enter Up/Down swing, with Up/Down swing icon flashing. Press SET key again when swing icon flashing to confirm, with swing icon statically display. If swing function is set, execute the above operation to cancel.
  - If connecting to the salve wired controller, Sw7 dip code of master and slave wired controllers should be set the same and should match the actual wired controller unit.



(3) If Sw5 is off, some models can self-adaptive the swing setting and swing angle control.

- If the angle of the Up/Down swing can be adjusted:

Press SET key to enter the function circulation; the Up/Down swing icon will flash. Press the SET key again; the swing angle will flash (if powered on for the first time, default angle will be different according to different modes; if not for the first time, the angle of swing will be displayed as last time). At this time, swing angle can be adjusted by Up/Down key (when in intelligent mode, the swing angle is position 1, press up key to automatic swing, and press down key to position 2). When pressing Up/Down key to adjust angle, if no operation in 10s, it will exist angle adjustment and function circulation. Interface displays the last angle. If you want to set other functions like sleep function, you need to press SET key again to enter function circulation.

- If the angle of the Up/Down and Left/Right swing can be adjusted:










Press SET key to enter the function circulation, and the Left/Right swing icon will flash. At this time, press Up/Down key to switch to Up/Down swing icon flashing. When Left/Right swing icon flashing, Press SET key again, the angle of Left/Right swing will flash (if powered on for the first time, the default angle is in position 1, the middle position of Left/Right swing icon; if not for the first time, the angle will be displayed as last time).

(4) Pressing Fan key or Mode key can both exit swing function, with no order sending. When Fan or Mode key is pressed again, the order will be sent. If the present angle is confirmed, pressing SET key will exit the swing function. In the adjustment process, if there is no key pressed for 10s, swing function will be exited, and swing angle will execute the final adjusted angle. In the adjustment process, pressing the ON/OFF key to power off the wired controller directly, and swing angle is the final adjusted swing angle.

### Health airflow up/down function ( Only valid for part of models )

(1) The function can be set through wired controller or remote controller.

(2) The function circulation is as follows:



 (Only when Left/Right swing is valid) →  (Only when Up/Down swing is valid) →  →  (ventilation function) →  (reserved function) → ECO →  (When it's time for filter cleaning, this icon will involve in circulation) →  (the second 8 of 88.8 in the temp. display area displaying A, only valid for part of models) →  (the second 8 of 88.8 in the temp. display area displaying B, only valid for part of models) →  (motion sensing, only valid for part of models) → 10°C heating function (this function only works in the heating mode, only valid for part of models) → health airflow up (Only valid for part of models) → health airflow down (Only valid for part of models)

(3) The function is valid only when the angle of Up/Down swing can be set.

(4) Health airflow up/down function cannot be set at the same time. When the latter is set, the former will be automatically canceled.

(5) After the function is set, the angle of Up/Down or Left/Right swing can be normally adjusted in the main interface. Press the SET key to enter function circulation. When Up/Down swing icon flashes, press SET key, and then swing angle position 1 will flash. Press Up/Down key to adjust the angle. When the adjusted swing angle is executed, the health airflow up/down is canceled simultaneously.

### Sleeping

(1) Press Set key to enter function setting, press ▼▲ to the sleeping icon “” and it will flash, the sleeping time will display by the  which is on the top-right corner. Press Time key to enter sleeping time setting. “OFF” and sleeping icon are flashing. Press ▼▲ to adjust the sleeping time by 0.5h once, the range of sleeping time is from 0.5h to 72h. After the adjustment, press Set key again to confirm the operation. “OFF” and sleeping icons are statically displayed.

(2) During sleeping icon is flashing, pressing Set key instead of Time key, the wired controller will take the converse operation of previous sleeping state. If there is sleeping set, cancel it; if not, come into the setting operation.

(3) If power off is executed during sleeping, the sleeping function is cancelled at the same time; there is no display when powered on again. It needs to be reset if any requirement.

(4) In sleeping set or modification state, if there is no operation in 10 seconds, it will keep previous state, and the setting or modification is invalid this time.


(5) Under sleeping and timer setting state, it will display setting time respectively; when setting simultaneously, it will display the prior executed time. When timer off is executed first, sleeping function will be cancelled and when sleeping is executed first, then timer off function will be operated after that.

(6) Under function setting state, it will exit function setting state by pressing Mode or Fan key.

(7) Sleeping time and timer on should not be set at the same time.

(8) When setting sleeping function, press ON/OFF key to quit sleeping set and turn off unit.

## Heat Reclaim Ventilation Function

(1) Press Set key to enter function setting, press ▼▲ to the heat reclaim ventilation icon “” and it will flash, press Set key again to confirm the operation. The above operation can cancel the heat reclaim ventilation function if heat reclaim ventilation function has been set.

(2) After you set heat reclaim ventilation function, change mode of wired controller, heat reclaim ventilation function is kept and heat reclaim ventilation function will be memorized when non-volatile memory valid.

## Switch between Fahrenheit and Celsius

(1) If the current temperature is displayed in Celsius, set temp. should be adjusted to 30°C in each mode (when energy saving function is set currently, the heating mode will be the highest limit value of the energy saving function). Then press ▲ key for 15s to switch to Fahrenheit, the interface will display 86°F (when energy saving function is set, its highest limit value of Fahrenheit will be displayed).

(2) If the current temp. is displayed in Fahrenheit, set temp. should be adjusted to 60°F in each mode (when energy saving function is set currently, the cooling/dry mode will be the lowest limit value of the energy saving function). Then press ▼ key for 15s to switch to Celsius, the interface will display 16°C (when energy saving function is set, its lowest limit value of Celsius will be displayed).

## Humidity Function ( Only valid for part of models )

Press the mode key to switch to the dry mode, and the humidity will be shown in the temp. display area. The Up/Down key is the humidity adjusting key.


## Energy Saving

(1) Press Set key to enter function setting, then press ▼▲ to choose energy saving, press Set key again to confirm the operation and display energy saving icon ECO . If energy saving function has been set, the above operation will cancel it.

(2) The energy saving default parameter are 23°C (74°F) (the lowest temp. limit of cooling and dry mode) and 26°C (78°F) (the highest temp. limit of heating mode). The temp. adjusting range is 23°C-30°C (74°F-80°F) in cooling and dry mode, the temp. adjusting range is 16°C-26°C (60°F-78°F) in heating mode. If energy saving function is set, the indoor units will run at the default temperature.

Note: Fresh Air unit has no energy saving function.

## Filter Cleaning

When filter cleaning icon  is displayed, the icon will display in function sequence. If filter cleaning icon is flashing, press Set key to clear it.

## 10°C Heating Function ( Only valid for part of models )

(1) Only in heating mode, this function is valid in function circulation.

(2) For the four-way cassette model, press the SET key for 5s to enter the function circulation. When it switches to the 10°C heating function, 10°C will flash in the temp. display area. Press the SET key to confirm, and 10°C will be statically displayed.

## Four-way cassette-Function (Only valid for part of models )




(1) When it is powered on for the first time, four-way cassette icon and Up/Down swing will be displayed. The number 1,2,3,4 next to the swing referred to different wind deflectors will be displayed (if the wind deflector is on the position 1, the Up/Down swing will stay the angle set by the wind deflector position 1. Meanwhile the number 1 next to the Up/Down swing will be displayed. If it is selected as four sides controlled together, the number 1, 2, 3, 4 next to the Up/Down swing will be displayed at the same time). Set key now can only switch among four wind deflectors. Use Up/Down key to set the angle of the current wind deflector.

(2) The circulation of the wind deflector:

four-way cassette deflectors controlled together → four-way cassette deflector 1 → four-way cassette deflector 2 → four-way cassette deflector 3 → four-way cassette deflector 4 → four-way cassette deflectors controlled together.

(3) If it's not the first time to enter it, press Set key, the wind deflector set last time will flash. Meanwhile the angle of this deflector set last time will be displayed statically, and the number of the wind deflectors next to Up/Down swing will be statically displayed.

### Motion sensing (Only valid for part of models )

(1) Press Set key for 5s to enter the function circulation, and then press Up/Down key to switch to  (the second 8 of 88.8 in the temp. display area displaying A) →  (the second 8 of 88.8 in the temp. display area displaying B) →  (motion sensing).

(2) After motion sensing A is set, the character A will disappear with room temp./set temp. displaying. The icon of motion sensing will display statically.

- After motion sensing B is set, the character B will disappear, with room temp./set temp. displayed. The icon of motion sensing will flash in the fixed frequency.
- After motion sensing is set, the icon of motion sensing will be displayed for 2s and disappear for another 2s to have respiratory effect.

### Motion Setting (Only valid for part of models )

(1) In off and non screen saving state, press Mode key for 5s, it will display 8 segment on the top-left corner of current mode circulation, default value being 0. Press Up/Down key to shift between 0, 1, 2, 3, then press Set key to confirm value. It will follow the altered mode circulation after turning on the unit again.

Corresponding mode of different value.

0-----[Intelligent] [Heating] [Dry] [Cooling] [Fan] 1-----[Heating] [Dry] [Cooling] [Fan]

2-----[Dry] [Cooling] [Fan]

3-----[Heating] [Dry] [Cooling] [Fan]

(2) The intersection of mode circulation set by wired controller and indoor unit is valid.

(3) Fresh Air unit can execute mode setting, it will execute the intersection with three modes of Fresh Air unit (cooling/heating/fan mode)

(4) The mode of indoor units can be inquired /changed by the advanced setting function after the wired controller is powered on, Only valid for part of models.

(5) Set as follows (Only valid for part of models):

Press Set key and Up key for 5s to enter the advanced setting state, with the function A in temp. display area displayed statically. Press Fan key to switch to function B. The function code 01 displayed in the clock display area will flash. The specific information in the timing display area is statically displayed, it can be changed in the range of 00-03 by Up/Down key. At this time press Set key to confirm, and the function code 01 in clock display area stays static, the specific information in the timing display area flashes, meaning it can be changed currently. Press Up/Down key to change the content and Set key to confirm.

### Malfunction Display

(1) Under no screen saving state, press Time key for 10 seconds to check all indoor units malfunction in the group. Unit No. is displayed behind the top-left colon; current malfunction is displayed before top-right colon and historical malfunction is behind colon.

(2) Unit No. is displayed in decimal and malfunction is displayed in hexadecimal.

(3) All hexadecimal numbers of malfunction are in capital. But b and d is in small capital in order not to mix with 8.


(4) If there is no current malfunction, "--" is displayed before the right colon; if there is no historical malfunction, "--" is displayed behind the right colon.

(5) Press Time key to quit malfunction check state. The clock information and timer information are displayed.

(6) Malfunction records clearance: Keep pressing Time key for 10 seconds, malfunction is displayed. Then press Time key again for 5 seconds to clear current and historical malfunction of all the units.

(7) Press ▼▲ to choose unit No..

### Child Lock

(1) Child lock function can be used to prevent false operation. All of keys are locked after pressing Set and ▼ together for 5 seconds. child lock icon  will display on the interface. All of settings will exit and keep the previous state. All of keys are invalid including "ON/OFF".

(2) The screen will unlock after pressing Set and ▼ together for 5 seconds, child lock icon will disappear and all keys are available.

Note:

When controlling Fresh Air unit, the controller main interface will not display Up/Down key in normal state. When in child lock setting, press Time key first to display Up/Down key at the main interface, and then press Set and Down key together for 5 seconds to enter child lock setting. After setting child lock, Up/Down key will keep displaying for the convenience of cancellation of child lock.

## Parameter Inquiry

(1) Keep pressing **Set** for 5 seconds (if it is the four-way cassette model, the time is 10 seconds) to enter parameter inquiry. Unit No. is displayed on 88 area of clock while data type is displayed on 88 area of timer. Unit No. is displayed on the first two "88" fields of clock while data type is displayed on the first two "88" fields of timer. The data type includes A, b, C, d, E and F. The current data is displayed behind date type. For example, ambient temp. of 00 unit is 16 degree, then "00 A 16" is displayed. Press **▼▲** to choose different type of data from A, b, C, d, E and F.

Data	Type meaning	System
A	Indoor sensor Tai temp.	Actual value, decimal sys.
b	Indoor sensor Tc1 temp.	Actual value, decimal sys.
C	Indoor sensor Tc2 temp.	Actual value, decimal sys.
d	Indoor unit PMV opening/2	Actual value, decimal sys.
E	Indoor unit address	Actual value, hexadecimal sys.
F	Indoor unit central address	Actual value, hexadecimal sys.

(2) In parameter inquiry state, press **Time** key to change the unit No. address in the group.

## Unit No. Setting

(1) Entering: Press **Set** key for 10 seconds (if it is the four-way cassette model, the time is 15 seconds) to enter unit No. setting/ inquiring.

(2) Setting is available when the communication address between indoor and outdoor unit is flashing if the indoor unit's dip switch can set the address, then use **▼▲** to adjust within the range of 0-3F. If the indoor dip switch cannot set the address, the communication address between indoor and outdoor unit is static, which can only be inquired.

(3) Wired controller's address is displayed before the colon of clock on the top-left corner, ranging from 0 to 15 and displayed in decimal system.

(4) The communication address between indoor and outdoor unit is displayed on the top-left corner. The default value is the current unit's address, selecting other indoor units by the **▼▲**.

(5) Central address is displayed on top-right corner which cannot be edited.

(6) Press **Set** key to confirm and exit the setting after changing the communication address of indoor unit. If press other keys or no operation in 10 seconds, it will automatically exit and keep previous setting. If press **Mode** or **Fan** key, exit and the current setting is invalid. If press "ON/OFF", turn on/off the unit directly and the current setting is invalid.

## Static Pressure Grade Inquiry and Adjustment Function

(1) In the state of ON and non screen saving state, press **Fan + Set** keys for 5s to enter static pressure grade adjustment state with static pressure icon flashing and current static pressure grade statically displaying. Press **▼▲** key to change static pressure grade, then press **Set** key to confirm.

(2) The unit No. will display by two 8 segments after colon on the top-left corner, and static pressure grade will display by two 8 segments after colon on the top-right corner. Press **Time** key to shift unit No..

(3) Unit No. will show decimally from 00-15. Static pressure will be shown decimally from 01-04.

(4) In query and adjustment state, if there is no screen saving, press **ON/OFF** key to quit current state and turning on/off unit, with changed values not being saved.

(5) Static pressure is the inquired value with non-volatile memory invalid.

(6) The number about the indoor units' static pressure grade and the static pressure grade executed by the indoor units can be queried/ changed by the wired controller(Only valid for part of models).

(7) The number about the static pressure grade and the static pressure grade can also be queried/ changed by advanced setting interface(Only valid for part of models).

## Communication with Central Controller

(1) The controller displays **🔒** to show central control mode after receiving central control signal from indoor unit;

(2) When **🔒** statically displays, all keys except "ON/OFF" of wired controller are invalid. central icon will disappear if no central control signal from indoor unit.

(3) When receiving locking signal from indoor unit, **🔒** statically display, all keys are invalid.

(4) In central or lock state, screen saving is valid; press any key to wake up screen.

(5) In central or lock state, malfunction inquiry, indoor unit parameter inquiry and child lock are valid.

### Energy Saving Parameter Setting

- (1) Under cooling mode 30°C (86°F), keep pressing F<sub>AN</sub> key for 5 seconds to set energy saving parameter in cooling mode. This cooling energy saving parameter is flashing behind top-left colon. The default value is 23°C (74°F). This lowest target cooling temperature can be adjusted by ▼▲. After setting, press Set key to confirm and exit.
- (2) Under heating mode 16°C (60°F), keep pressing F<sub>AN</sub> key for 5 seconds to set energy saving parameter in heating mode. This heating energy saving parameter is flashing behind top-right colon. The default value is 26°C (78°F). This highest target heating temperature can be adjusted by ▼▲. After setting, press Set key to confirm and exit.
- (3) Energy saving parameter will be valid after energy saving icon ECO displays.

### Non-volatile Memory

- (1) Set valid or invalid non-volatile memory through dip switch Sw4.
- (2) Info memorized: Mode, Fan Speed, Temp. Setting, Swing State, Heat Reclaim Ventilation function.
- (3) If timer or sleeping is set, it will be in OFF state after electrified again; it will memorize all the state before power failure except ON/OFF state.
- (4) For easy maintenance, no matter non-volatile memory is valid or invalid, malfunction record will be remembered.

### Communication Malfunction of Wired Controller

If there is no communication between wired controller and indoor unit for 4 minutes, it will display error code "07" when checking malfunction.

### Sensor Malfunction

If the dip switch is set to collect ambient Temp. from wired controller and the sensor can't work normally, it will display error code "01" when checking malfunction.

### Temp. Compensation Setting

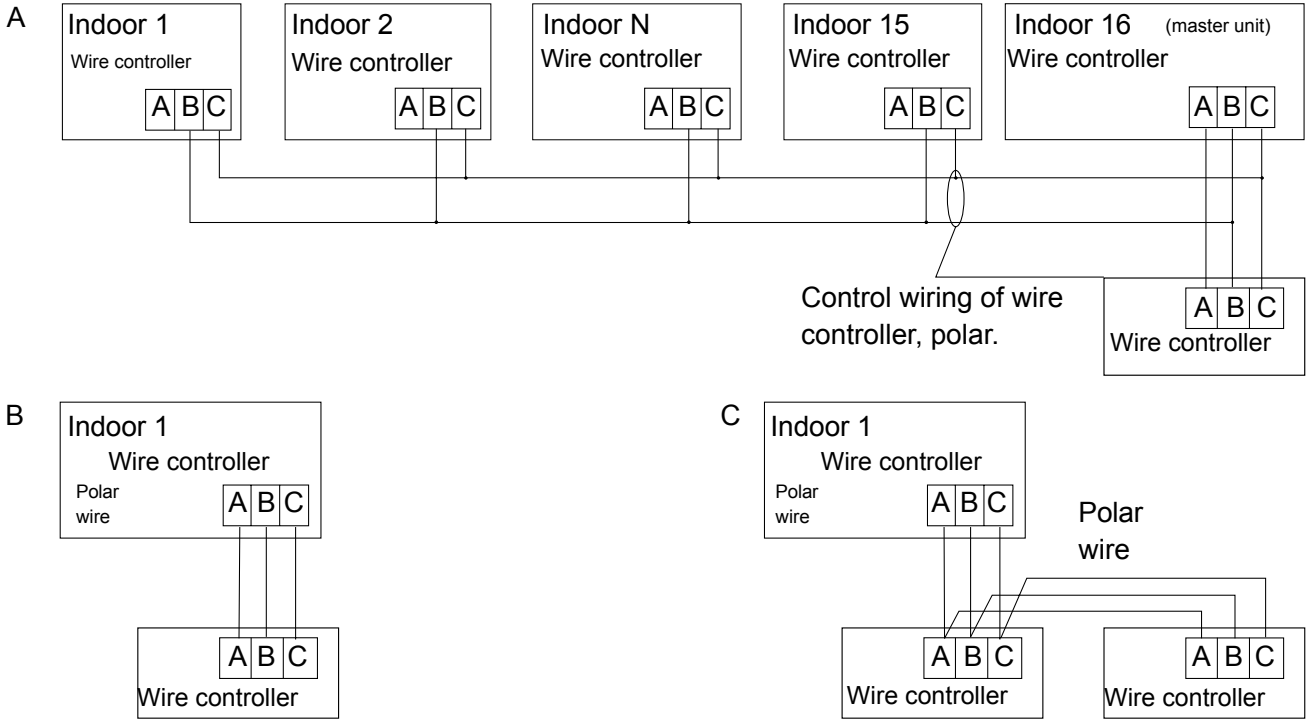
- (1) In OFF state, keep pressing F<sub>AN</sub> key for 5 seconds, the current temp. compensation value is displayed on the top-right of the screen and flashes. "00" is the default value.
- (2) When in Celsius system, ambient compensation value is -04~+04°C, while in Fahrenheit system, ambient compensation value being -07~+07°F. The temp. compensation value can be adjusted by pressing ▼▲.
- (3) After adjustment, press Set key to confirm the setting.
- (4) The compensation value is used for ambient temp..
- (5) The compensation value is valid only in the state of collecting ambient temp. of wired controller.

### Forced Cooling/Heating

- (1) Powered off in cooling mode, keep pressing "ON/OFF" key for 10 seconds, it will enter into the forced cooling function, and the cooling mode icon will be displayed on the interface. "LL" is flashing in the temp. area at the same time. Press "ON/OFF" key to power off and exit forced cooling.
- (2) Powered off in heating mode, keep pressing "ON/OFF" key for 10 seconds, it will enter into the forced heating function, and the heating mode icon will be displayed on the interface, "HH" is flashing in the temp. area at the same time. Press "ON/OFF" key to power off and exit forced heating.

• Wired Controller Wiring Instruction

**Wiring Connections of Wire Controller**



Notice: For wired controller connection, please do follow the corresponding indoor unit installation manual's instruction.

- There are three methods to connect wired controller with the indoor units
- A. One wired controller can control max. up to 16 sets of indoor units, and 3 pieces of polar wire must connect the wire controller and the master unit (the indoor unit connected with wire controller directly), the others DC indoor unit connect with the master unit through 2 pieces of polar wire and AC indoor unit connect with the master unit through 3 pieces of polar wire.
  - B. One wire controller controls one indoor unit, and the indoor unit connects with the wire controller through 3 pieces of polar wire.
  - C. Two wired controllers control one indoor unit. The wired controller connected with indoor unit is called master one, the other is called slave one. Master wired controller and indoor unit; master and slave wire controllers are all connected through 3 pieces of polar wire.

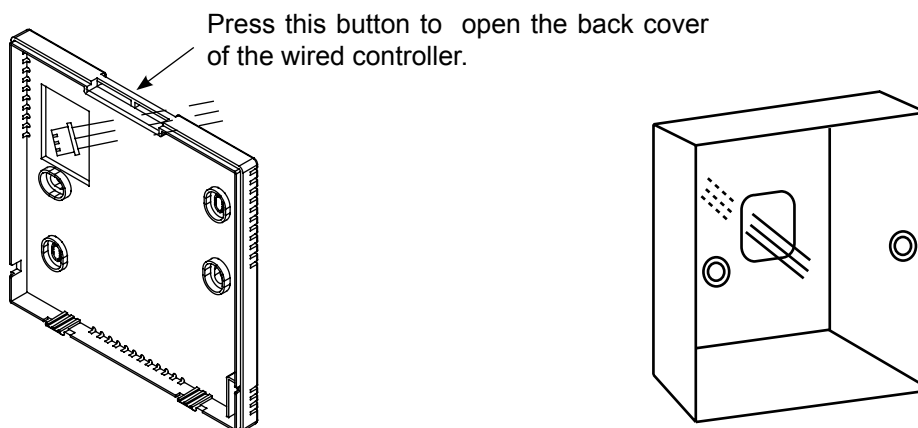
**Communication wiring**

Communication wiring length (m)	Dimensions of wiring
≤ 250m	0.75mm <sup>2</sup> x3-core shielded wire

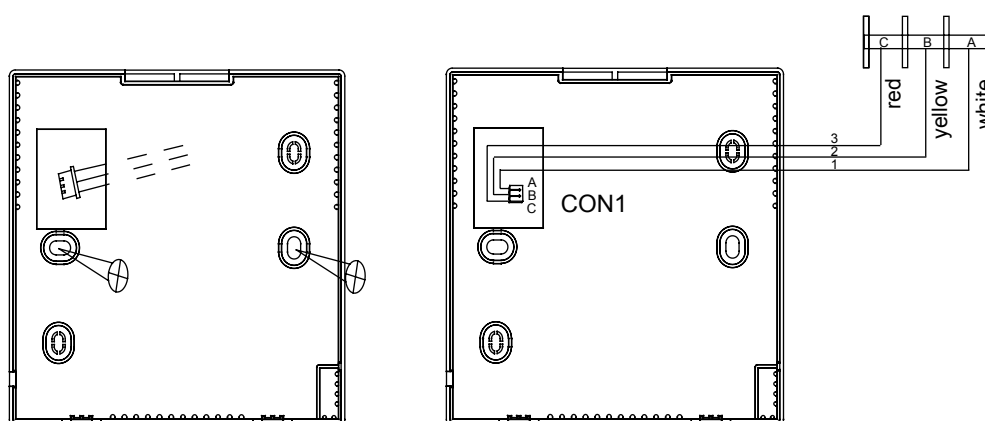
\*One side of the shielded sheet of communication wire must be earthed.

## Installation manual for wired controller

1. First, put communication wire through the hole in the back cover.



2. Fix back cover to the holder. After that, connect communication wire to CON1 port of wired controller. Finally put the front cover of wired controller to back cover to complete the installation.





## 3.2 YR-E20

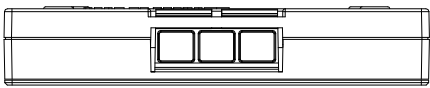
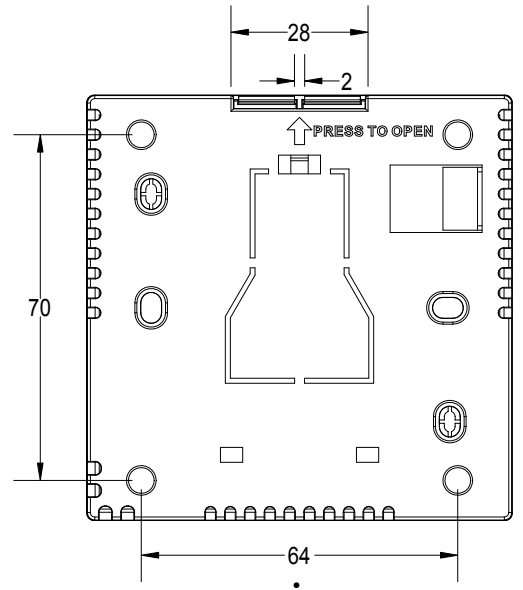
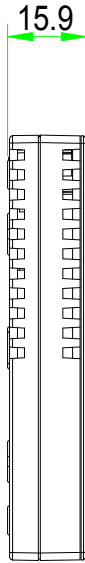
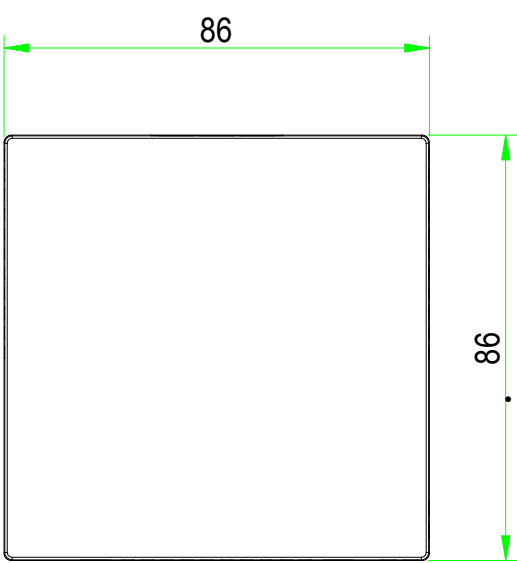


MRV	LCAC			
	Smart Power	Super Match	R410A ON/OFF	R22 ON/OFF
				√

- On/Off, Mode, Fan speed, Temperature setting, Swing.
- Individual & Group control (Max 16 indoor units)
- Simple and Smart design, 86\*86\*15.9mm
- Touch button with back light





























## Dimension





## Icon Instruction

	Clock
	Present/history error code inquiry, Energy saving data display.
	Timer on, Timer off, Timer on/off.
	Temperature display, the accuracy is 0.5°C. For example, 25.0°C will be displayed if the temperature is an integer. It is used for temperature compensation data display, sleeping time display. When the ambient temp. is displayed on the wired controller, the thermometer on the top-left corner will display accordingly.
	Set, the controller shows this icon when setting the energy saving data, temperature compensation data.
	Error, this icon appears when communication error happens or indoor unit meets error. This icon disappears after the error is solved.
	Swing, this icon is displayed dynamically if swing is set. No swing is displayed if swing function is not set.
	Filter cleaning
	Fresh, this icon is displayed if fresh is set; no fresh is displayed if it is not set.
	Electrical heating
	Health
	Sleeping, this icon is displayed after sleeping is set. The sleeping time is displayed when the function cycle shift to sleeping.
	Energy saving
	Quiet
	Turbo, this function is invalid after sleeping is set. The function will be canceled if you set sleeping mode after turbo mode.
	Lock, this icon is displayed after lock signal is received from communication. Operation is invalid after the wired controller is locked.
	Defrost
	Child lock, this icon is displayed only after you set child lock, or it will not display.
	Intelligent mode
	Cooling mode
	Heating mode
	Fan mode
	Dry mode

⋮ ⋮ ⋮  ⋮ ⋮ ⋮	Low speed
⋮ ⋮ ⋮ ⋮  ⋮ ⋮ ⋮ ⋮	Medium speed
⋮ ⋮ ⋮ ⋮ ⋮  ⋮ ⋮ ⋮ ⋮ ⋮	High speed

## Dip Switch Instruction

Dip switch	ON	OFF	Default
SW1	Inverter unit	On/Off unit	OFF
SW2	Ambient temperature display	Ambient temperature no display	OFF
SW3	Room temperature sensor on PCB is valid	Room temperature sensor on wired controller is valid	OFF
SW4	Function cycle (simple version)	Function cycle (general version)	OFF
SW5	Old Protocol	Self adaption	OFF
SW6	Reserved	Reserved	OFF
SW7	No swing	Swing	OFF
SW8	Electrical heating is started manually	Electrical heating is started automatically	OFF



## Setting for Special Function

Pressing function key in 5 seconds continuously	Function setting
On (unit is on)+pressing function key 10 times	Set the non-volatile memory after the buzzer sounds 4 times
	Cancel the non-volatile memory after the buzzer sounds 2 times
Press function key 12 times to set the child lock Press function key 4 times to cancel the child lock	<ol style="list-style-type: none"> <li>1. Set the child lock after the buzzer sounds 7 times, cancel child lock after the buzzer sounds 2 times.</li> <li>2. Child lock can also be set by keep pressing fan speed key and function key for 5s together. These two ways can be used mutually to set or cancel the child lock.</li> <li>3. The function key can unlock the child lock only under child lock mode. The buzzer can sound once you press the function key, but no function cycle is displayed.</li> </ol>
Off (unit is off)+function 10 times	The ambient temperature is displayed 5 seconds after the buzzer sounds 3 times. (SW2 is OFF)
Pressing function key in 5 seconds continuously	Function setting
Unit is on+ heating mode+30°C + high speed+function 6 times (30°C changes to be the limit highest temperature if energy saving is set)	After the buzzer sounds 3 times, wired controller send the “forced defrost” to indoor unit, the defrost icon flashes 3 times, then disappears.
Unit is on+ cooling mode+16°C+high speed+function 8 times (16°C changes to be the limit lowest temperature if energy saving is set)	To enter rated cooling mode after the buzzer sounds 5 times.
Unit is on+ heating mode+30°C + high speed+function 8 times (30°C changes to be the limit highest temperature if energy saving is set)	To enter rated heating mode after the buzzer sounds 5 times



## Initialization

1. After power on, initialization finishes after wired controller interface being displayed 5 seconds.
2. Sound indication: the buzzer sounds 2 times quickly after pressing the ON/OFF key to be on. The buzzer sounds 1 time slowly after pressing the ON/OFF key to be off.


## Screen Saving

1. In the state of off and non screen saving, keep  pressing and  for 5s to set screen saving time, which will be shown after the top-left colon 88 statically. Press up/down key to adjust screen saving time and press function key to confirm.
2. Screen saving time should be 0s (backlight always on when wired controller is on), 15s, 30s, 60s, default value is 15s. If it is not the first time of setting, it will display the screen saving time adjusted last time.
3. In the process of changing screen saving time, press ON/OFF key to quit screen saving time setting function, it will recover to screen saving time before adjustment and startup the unit.
4. Switch on the unit, the backlight is burning. Switch off the unit, the backlight is off. The leaf icon is on after switching on the unit (whatever backlight is on/off). The leaf icon is off after unit is off.
5. For the convenience of adjusting clock, the backlight is on if wired controller is off after powering on, when switch on the wired controller and then switch off, the backlight will be off normally.
6. Under Off state, the backlight is activated only if you press any key except ON/OFF key, no more operation executed, if press ON/OFF key, wired controller switch on directly. The unit is switched on and the backlight is activated once you press any key include ON/OFF key.
7. Under Off state, the clock, ambient temperature (if SW2 is ON), timer (if you set) and fresh (only in the case of setting fresh when wired controller is off) is displayed, you can set clock, timer, fresh, child lock, temperature compensation parameter, ambient temperature display under Off state.

## Clock Function

1. Press function key,  icon is flashing, then press function key again,  and the AM or PM are flashing. You can press up/down key to change the clock. Press function key to confirm the adjustment. No pressing of function key or no adjustment for 10 seconds, the clock will back to the previous station.
2. Press up/down key, the clock will increase or decrease 1 minute once. Keep pressing the up/down key, the clock can be adjusted more quickly. It will quit the function circulation after confirm the clock adjustment or no operation for 10 seconds.
3. The clock range: 12:00 AM to 11:59AM (12:00AM is 0 o'clock in midnight), 12:00PM to 11:59PM (12:00PM is 12:00 at noon). The default time is 12:00PM.
4. The clock cannot be changed after you set timer/sleeping. Clock will not in the function cycle after you set timer/sleeping function.

## Timer

1. Timer mode: timer on, timer off, timer on/off.
2. Time precision: 1 minute/1 hour; Timer clock is based on the current clock time, when timer clock is over, the timer icon disappears and execute the timer function.
3. Timer & on/off: timer can be set whenever unit is on/off. The controller show the timer icon and time whenever the unit is on/off if you set the timer.
4. Press function key, then press up/down key until  flashes. Press function key to begin time adjustment, timer icon will display statically when adjusting timer.

① When setting timer on, default 12:00PM (previous setting will be displayed if there is setting before) "ON" and timer on hour place will flash, adjusting by up/down key. Keep pressing to accelerate the adjusting speed, the same as clock time. Pressing fan speed key can shift to "ON" and minute place of timer on. When finishing adjustment, press function key to confirm, time and timer icon display statically on the screen.

② When setting timer off, default 12:00PM (previous setting will be displayed if there is setting before) "ON" and timer on hour place will flash. Press fan speed key to shift to "ON" and minute place of timer on. Press fan speed key again to shift to "OFF" and hour place of timer off, with default 12:00PM displaying (previous setting will be displayed if there is setting before), then press up/down key to adjust time and press fan speed key to shift to "OFF" and minute place of timer off. When finishing adjustment, press function key to confirm, time and timer icon display statically on the screen.

③ When setting timer on & off, it displays default 12:00PM for the first time (previous setting will be displayed if there is setting before). Then hour position and “ON” are flashing; Press fan speed key again, the minute position and “ON” are flashing; Press fan speed key again, it displays default 12:00PM for the first time (previous setting will be displayed if there is setting before). Then the hour position and “OFF” are flashing; Press fan speed key again, the minute position and “OFF” are flashing; Press fan speed key again, it displays default 12:00PM with ON & OFF for the first time (previous setting will be displayed if there is setting before). Then the hour position and “ON” are flashing. Press up/down key to adjust the time, minus/add 1 hour a time. Keep pressing to accelerate the adjusting speed; Press fan speed key again, the minute position and “ON” are flashing; Press fan speed key again, then the hour and “OFF” are flashing. Press up/down key to adjust the time, minus/add 1 hour a time. Keep pressing to accelerate the adjusting speed; Press fan speed key again, the minute position and “OFF” are flashing. The controller will judge the order of timer on and off and use the arrow show the order. First ON then OFF: ON→OFF; First OFF then ON: ON←OFF. Press function key to confirm the setting. If no input for 10s, this setting will be cancelled and the timer will come back to the previous state.

④ Timer function cancellation: when in the process of setting timer, press mode key or ON/OFF key can exit timer setting, and it will return to previous state; press mode key to only exit. Press ON/OFF key can exit the timer setting and power on/off directly. If there is a timer before, execute the above steps. When pressing fan key to shift to timer off minute place of timer on&off, and then press again to cancel the timer.


⑤ Timer and clock displaying type: timer is prior to clock. If there is no setting of timer, time area will display clock time. When timer is set, timer time will display, then press function key to check the clock. The clock icon and time will display statically. If there is no pressing of up/down, fan, mode or function key for 10 seconds, it will quit clock checking. It will display previously timer and if press ON/OFF key, it will quit clock checking and execute turning on/off unit operation.

⑥ Requirement of timer setting: When the setting time is the same with current time or timer on is the same with timer off, it cannot be confirmed by function key but remain the current state, buzzer buzzing normally; If there is no changing operation and no key pressing for 10 seconds, it will quit setting and setting invalid.

⑦ Timer on/off and sleeping is independent which can be executed separately, but sleeping will be cancelled after turning off the wired controller. When timer on is the same with the sleeping time, the last setting will not be confirmed, If there is no changing operation and no key pressing for 10 seconds, it will quit the last setting and setting invalid.

## Swing

For part of models, the angle of swing can not be adjusted:

1. Press function key , icon flashes, pressing function key again to confirm. Swing icon will dynamically display. If swing function is set, execute the above-mentioned process to cancel the function, with swing icon disappeared.

2. Swing function is valid only SW7 is OFF, it will not in the function cycle if SW7 is ON.

3. For part of models, the angle of Up/Down swing can be adjusted:

Press function key to enter function circulation, the Up/Down swing icon will flash, then press the function key again, the angle of the Up/Down swing will flash (if powered on for the first time, the default angle will be different according to different modes; if not for the first time, the angle of swing will be displayed as last time). At this time, swing angle can be adjusted by UP/Down key. When pressing Up/Down key to adjust angle, if no operation in 10s, it will exist angle adjustment and function circulation. Interface displays the last angle. If you want to set other function like sleep function, you need to press function key again to enter function circulation.


The Left/Right swing can be adjusted:

Press function key to enter function circulation, the Left/Right icon will flash, then press the function key again, the angle of the Left/ Right swing will flash (if powered on for the first time, the default angle is in position 1, the middle position of Left/Right swing icon; if not for the first time, the angle of swing will be displayed as last time). At this time, swing angle can be adjusted by UP/Down key. When pressing Up/Down key to adjust angle, if no operation in 10s, it will exist angle adjustment and function circulation. Interface displays the last angle. If you want to set other function like sleep function, you need to press function key again to enter function circulation.


The swing function exit:

Pressing Fan key or Mode key can both exit swing function; After adjusting angle of swing, press function key to confirm the angle and exit the swing function; In the adjustment process, if there is no key pressed for 10s, swing function will be exited, and swing angle will execute the final adjusted angle. In the adjustment process, pressing the ON/OFF key to power off the wired controller directly, and swing angle is the final adjusted swing angle.


## Filter Cleaning

When filter cleaning icon displays, press function key ,then press up/down key to activate , then press function key to remove filter cleaning icon.


## Fresh

1. Choose fresh by function and up/down keys, when the  icon flashes, press function key to confirm, then the icon displays statically. Do same operation again to cancel fresh function.
2. After you set fresh, it is switched off together with off commend from wired controller. fresh will be kept once the unit is switched on . You can set the fresh under unit off state and keep it when the unit is switched on again. It will not disappear when changing mode.
3. Fresh is in function cycle only when SW4 is OFF.


## Electrical Heating

1. Set or cancel  by function and up/down keys. You can find the electrical heating under heating mode or intelligent mode heating running only.
2. The electrical heating is switched on automatically if SW8 is OFF, the electrical heating icon displays. You can cancel this function manually after it is switch on automatically, then when wired controller is switched on again with heating mode or changing to heating mode again, electrical heating function will switch on automatically again. The electrical heating will be activated manually if SW8 is ON. When electrical heating is set, it will be kept once the wired controller is switched on again, but not kept with mode changing.
3. Under intelligent mode heating running, wired controller received the heating signal from the indoor unit,then the electrical heating will be in function cycle, otherwise, you cannot find electrical heating in function cycle.


## Health

1. Press function key and up/down key to shift to  and it flashes, and then press function key again to confirm the setting. If health is set, execute the above operation to cancel the health.
2. The health function will be kept once the wired controller is switched on again and mode changing when it has been set. Health function will valid only when SW4 is OFF and invalid when it is ON.


## Sleeping

1. Choose  function by function and up/down keys, then press function key to confirm. 8h is displayed (8 hour is default, or others if you ever set it). You can adjust the time by up/down keys. The range is 1h-8h, after adjustment, press function key again to confirm this setting. The sleeping time disappears after 3 seconds. Then the set temperature/ ambient temperature is displayed. You need shift to the sleeping function if you want to see the sleeping time,the time is displayed automatically. You can cancel the sleeping function with the same operation.
2. Sleeping function is valid when SW4 is OFF and invalid when SW4 is ON.

## Turbo/Quiet

1. Choose  the by function and up/down keys, when the icon flashes, press function again to set or cancel the quiet function. The turbo function operation is same to quiet function.
2. After setting turbo/quiet, fan speed changes to auto. Under this state, you will quit turbo/quiet function if you press fan speed key and the fan speed will return to the state before entering into turbo/quiet. You cannot set turbo and quiet at the same time, the last operation will instead of the prior one. You cannot use turbo function during sleeping time.
3. You can find turbo/quiet in function cycle only under cooling/heating mode and SW4 is OFF. They will be cancelled after any mode change operation and on/off operation.

## ECO

1. Press function key to enter function setting, then press up/down key to choose energy saving, press function key again to confirm the operation and display energy saving icon . If energy saving function has been set, the above operation will cancel the energy saving function.
2. This icon will not display under off state. The ECO setting is memorized always. You can set ECO function under any mode. But it is available under cooling/heating/dry modes only.



3. This function is valid only when SW4 is OFF and invalid when SW4 is ON.

### Switch between Fahrenheit and Celsius

1. If the current temperature is displayed in Celsius, set temp. should be adjusted to 30°C in each mode (when energy saving function is set currently, the heating mode will be the highest limit value of the energy saving function). Then press  $\Delta$  key for 15s to switch to Fahrenheit, the interface will display 86°F (when energy saving function is set, its highest limit value of Fahrenheit will be displayed).
2. If the current temp. is displayed in Fahrenheit, set temp. should be adjusted to 60°F in each mode (when energy saving function is set currently, the cooling/dry mode will be the lowest limit value of the energy saving function). Then press key  $\nabla$  for 15s to switch to Celsius, the interface will display 16°C (when energy saving function is set, its lowest limit value of Celsius will be displayed).

### Self-cleaning function

1. How to set:

- (1) Press function key to enter function setting, then press up/down key till CL icon flashing, press function key again, self-cleaning function is successfully set, "CL" icon stop flashing.
- (2) There is remote control receiver in wired controller, self-cleaning function can also be set by remote controller.

2. How to cancel:

- (1) Press function key to enter function setting, then press up/down key till CL icon flashing, press function key again, self-cleaning function is successfully canceled. The indoor unit will quit after executive the self-cleaning function.
  - (2) There is remote control receiver in wired controller, self-cleaning function can also be canceled by remote controller.
  - (3) Self-cleaning function will be canceled after pressing ON/OFF key or mode key; receiving ON/OFF or mode change signal from remote controller, self-cleaning function will also be cancelled.
3. If sleep/timer is set, self-cleaning function will not be in the function cycle list. After self-cleaning function is set, timer/sleep function will not be in the function cycle list.

### Special Functions

For part of models, if indoor unit is responded as four-way cassette, press function key for 5 seconds to enter function circulation, press Up/Down key to shift to motion sensing A, motion sensing B, motion sensing.

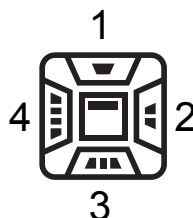
1. Motion sensing:

Press function key for 5 seconds to enter function circulation and then press up/down key to shift to motion sensing A (the second 8 digit of 88.8 of temp. displaying area will display A without displaying temp. and sleeping time) → motion sensing B (the second 8 digit of temp. displaying area will display b without displaying temp. and sleeping time) → motion sensing

- (1) Motion sensing A means following people, after setting of motion sensing A, A will disappear and it will display ambient/set temp. normally and the motion sensing icon will display statically.
- (2) Motion sensing B means avoiding people, after setting of motion sensing B, b will disappear and it will display ambient/set temp. normally and the motion sensing icon will flash.
- (3) After setting of motion sensing, the icon will display in circulation: appear for 2s and disappear for 2s.
- (4) Motion sensing can be set by remote controller. It will be memorized in operation of powering on/off and power down and will be kept in mode shift.
- (5) This function is valid in function circulation only when the indoor unit is responded as four-way cassette.
- (6) Four-way cassette or health airflow function is invalid when motion sensing is set, then setting four-way cassette or health airflow function again, motion sensing becomes invalid and motion sensing icon disappears.

2. Four-way cassette:

In on state, press function key to display four-way cassette icon and up/down swing icon.





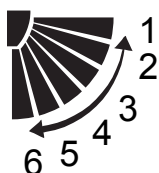
(1) First powering on, the initial position of respective mode:

	Intelligent	Heating	Cooling	Dry	Fan
Four-way swing	All display	All display	All display	All display	All display
Swing angle	Position (3)	Position (5)	Position (3)	Position (3)	Position (3)

(2) After powering on, press function key to shift swing blade and the following circulation: four-way simultaneous control→four-way cassette1→four-way cassette2→fourway cassette3→four-way cassette4→four-way cassette simultaneous control. If it is not the initial entering, press function key to display the last swing blade position and flashing, and it will display the last setting swing angle of this swing blade on the right-side up/down swing.

(3) When pressing function key to select swing type, the selected blade will flashing, press up/down key to adjust swing angle. If pressing mode or fan key in the adjustment, it will quit four-way cassette adjustment and display the last set swing blade position and angle. If there is no operation of up/down key for 5s after pressing function key, the selected swing blade will stop flashing and return to the previous state.

3.Swing angle:



(1) 1: Position 1 2: Position 2 3: Position 3 4: Position 4 5: Position 5 6: Position 6(reserved)

(2) The swing angle circulation is: position1→Position 2→Position 3→Position 4→Position 5→Auto→Position1

(3) Auto wind: it will display in circulation:

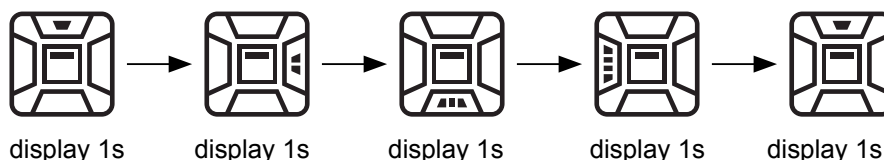
1→2→3→4→5→4→3→2→1

(4) The initial entering default position after powering on is as above mentioned, and the swing angle will in circulation by up/down key from default position, for example, if current position is in position 3, press up key to position 2, press down key to position 4. If it is not initial entering, swing angle will in circulation from the last setting angle.

4. Health airflow

This function is set only by remote controller, after setting, it will memorized in mode shift and will not memorized when powering on/off and powering down. After setting, the four swing position will display in circulation (as blow graphs), meaning the swing air is in rotation and the up/down angle displays auto swing in the meanwhile. In health airflow, press function key, it will display the swing blade and up/down angle before entering the health airflow.

Press up/down key in 5s to adjust swing angle and quit health airflow, if there is no pressing of up/down key for 5s, resume health airflow.



## ECO Parameter Setting


1. Unit on+cooling+30°C, keep pressing fan+ up keys for 5 seconds, ECO parameter is displayed on top-left corner, and the setting icon statically displays 23°C is the default data in cooling mode. This is to say, the target cooling temperature is from 23°C to 30°C. You can change ECO data by up/down key, and press function key to confirm. It is available under cooling and dry mode.

2. Unit on+heating+16°C, keep pressing fan+ down keys for 5 seconds, ECO parameter is displayed on top-left corner, and the setting icon statically displays 26°C is the default data in heating mode. This is to say, the target heating temperature is from 16°C to 26°C. You can change this ECO data by up/down key, and press function key


to confirm. It is available under heating mode.

3. The target temperature is 16°C when entering the forced cooling even if you set ECO mode. The unit shift to ECO mode after it exits the forced cooling.


## Error Code Inquiry

1. If there is error, error icon  will be displayed and error code will be displayed at the temperature displaying area.
2. Keep pressing function key for 5 seconds (if indoor unit is responded as four-way cassette, keep pressing function key for 10 seconds, the controller will display error.), the controller will display error. Current error will be displayed before colon at top-left corner and historic error after the colon. If no current error, it displays "--" and no historic error "--". Under error inquiry state, keep pressing function key for 5 seconds to clear current and historic error. If there is still current error, it will display current error again.
3. Press any key to quit the error inquiry state. Wired controller will quit the error inquiry state or error cleaning state if no operation for 10 seconds.
4. If there is communication error between wired controller and indoor unit, wired controller will display E8 and error icon. Wired controller can be operated normally and display the set temperature when adjusting. If there is no operation for 3s, it displays E8 again. If the communication restores, the error is relieved.

## Child Lock

1. Keep pressing fan & function keys for 5 seconds,  is displayed. Every key except function key (for cancellation of child lock) is invalid. Repeat fan & function keys for 5 seconds to cancel the child lock.
2. Keep pressing fan speed key and function keys for 5s together to set or cancel child lock, this setting way can execute the same function to the other way that pressing function key 12 times or 4 times in 5s to set or cancel child lock.


## Matching Central Controller/130

The controller displays  when the indoor unit send lock signal (state, not command) to controller. All keys are invalid including remote control signals.

## Non-volatile Memory

1. Under on state and backlight is on, press function key 10 times in 5 seconds. The non-volatile memory function is set after buzzer sounds 4 times. After this setting, on/off state, running mode, fan speed, set temperature, swing, electrical heating state, health and fresh are memorized in program. After power failure, all above modes are kept in same state as that before power failure. Press function key 10 times in 5 seconds to cancel the non-volatile memory function. The buzzer will sound 2 times. After you cancel this function, once power failure happens, the wired controller is off state after power comes back. The running mode is intelligent mode, auto fan speed, 24°C. If you set non-volatile memory and timer or sleeping function, the wired controller enters off state after power failure, then enters the previous state.
2. Wired controller runs as no non-volatile memory function if the EEPROM is broken, even if you set the non-volatile memory function.
3. No matter non-volatile memory is valid or invalid, error code, ECO parameter and temperature compensation will be remembered.

## Temperature Compensation

1. Under off state and backlight is on, keep pressing fan key for 10 seconds, compensation parameter and  are displayed. The default data is 00. When in celsius system, ambient compensation value is from -04 to 04, while in fahrenheit system, ambient compensation value being from -07 to 07, then press function key to confirm the setting.
2. The compensation is valid only when SW3 is OFF, that is to say, it is valid when wired controller sensor is valid.

## Forced Cooling

Press ON/OFF key within 5 s in off state to turn on the unit with buzzer buzzing 2 times. Keep pressing ON/OFF key for 5 seconds, the buzzer sounds 2 times. The unit enters forced cooling mode, then the state is on, cooling mode, 16°C, high speed. LL is displayed instead of set/ambient temperature, and LL is flashing. Press any key or receive remote signals to exit the forced cooling mode.

## Rated Cooling

Under on state, cooling, high speed, 16°C (if energy saving mode is set, it is the limit lowest temperature), and press function key 8 times in 5 seconds to enter rated cooling mode after the buzzer sounds 5 times, the state is high speed and standard cooling swing. The unit will exit the rated cooling mode when receiving the new command through remote or manual signal.


## Rated Heating

Under on state, heating, high speed, 30°C (if energy saving mode is set, it is the limit highest temperature), and press function key 8 times in 5 seconds to enter rated heating mode after the buzzer sounds 5 times, the state is high speed and standard heating swing. The unit will exit the rated heating mode when receiving the new command through remote or manual signal.

## Ambient Temperature Display

1. The set temperature is displayed default. You can change to ambient temperature: off state, active the backlight and press function key 10 times in 5 seconds. The buzzer will sound 3 times. The ambient temperature is displayed for 5 seconds.
2. The wired controller will always show ambient temperature when SW2 is ON.

## Forced Defrost

Under heating, high speed, 30°C (or the limit highest temperature in ECO mode), press function key 6 times in 5 seconds. The buzzer will sound 3 times. The wired controller send the forced defrost signal to indoor unit.  will flash 3 times.

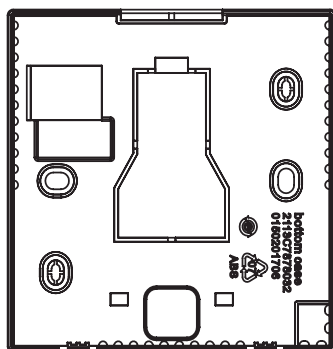
## Infrared Signal Receiving

1. The wired controller refreshes the date and displays function icon after receiving the infrared control signal. The buzzer sounds after wired controller receives the signal, but the interface will not display the function that controller doesn't have. The sounds of buzzer are the same with controller setting automatically. The buzzer does not sound if the wired controller fails to receive the signal. When wired controller and remote controller are in the same on/off state, and the controller receives non-correct mode signal from remote controller, the buzzer sounds 3 times and wired controller will not received the signal.
2. Wired controller received G code communication protocol only.

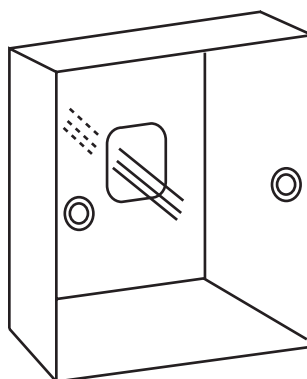
## • Wired Controller Wiring Connection

1. Pull the communication wire though the hole of back cover.

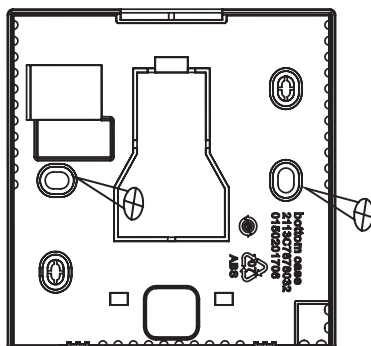
press this clip to open the wired back cover



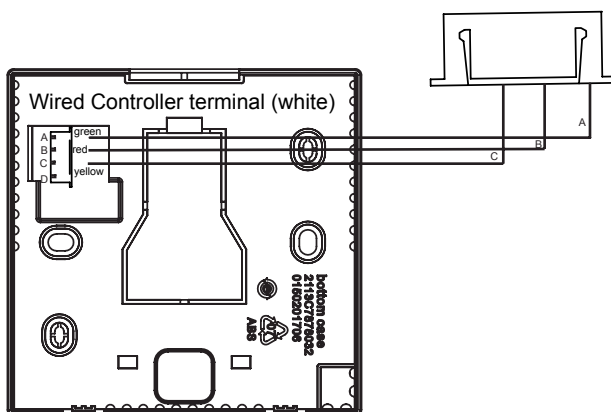
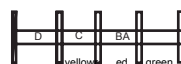
base box



2. Fix the back cover to base box. Then connect the communication wire to wired controller. Put the front board of wired controller to back cover. Finish the installation.



Please connect the red terminal of communication wire to indoor unit PCB. There is a shielded wire at the red terminal part, which should be linked to indoor unit ground wire.



## 3.3 HW-BA116ABK

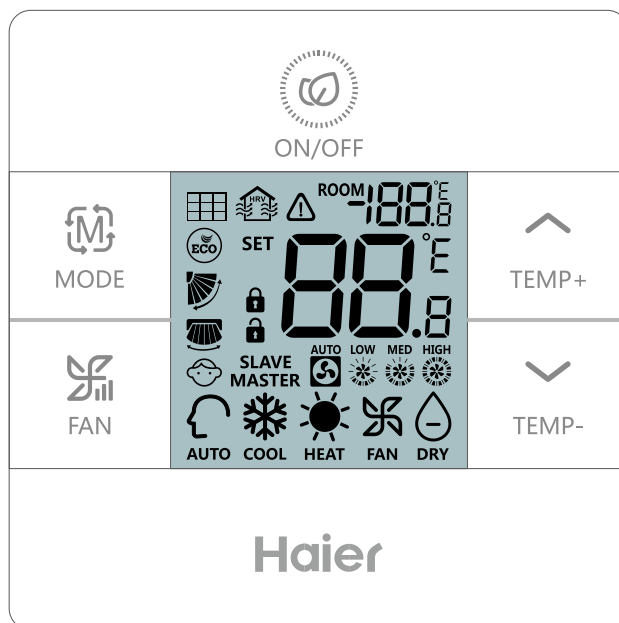


MRV	LCAC			
	Smart Power	Super Match	R410A ON/OFF	R22 ON/OFF
√		√	√	

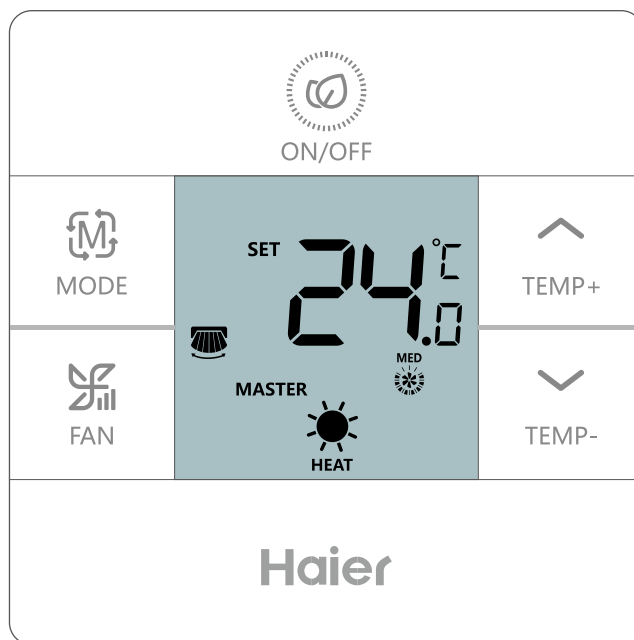
- Basic function: On/Off, Mode, Fan speed, Temperature
- Individual & Group control (Max 16 indoor units)
- Simple and Smart design, 86\*86\*15.8mm

• Parts and Functions

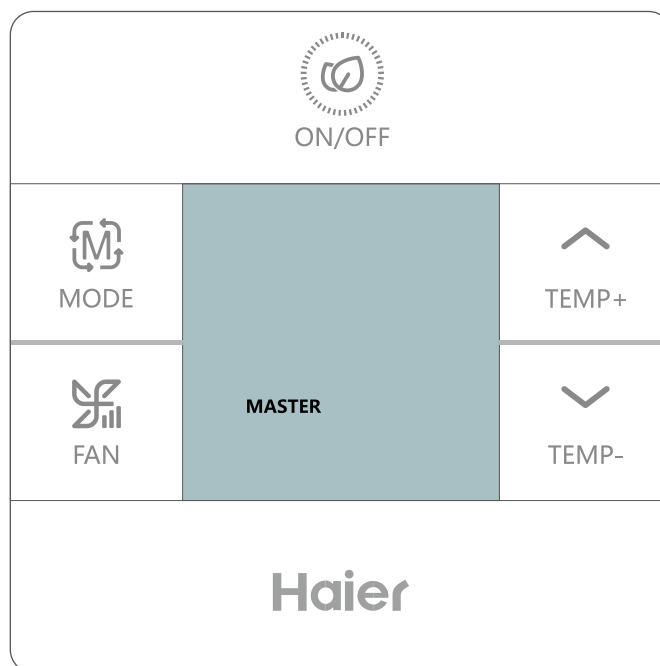
**Interface Display**



Full display












ON display



OFF display





























## Icon

	<p>Room temp. display; ECO parameter display; Historic error code display; Parameter display; Central address display; Temp. compensation setting display; Mode combination setting display.</p>
	<p>Set temp. display; Forced cooling LL/ forced heating HH icon display; Current error code/unit No. display; Parameter checking unit No. display.</p>
	<p>Filter</p>
	<p>HRV(Heat Reclaim Ventilation), if HRV function is set, it will display this icon.</p>
	<p>Error icon</p>
	<p>ECO icon, if ECO function is set, it will display this icon.</p>
	<p>Central/lock</p>
	<p>UP/DOWN swing</p>
	<p>LEFT/RIGHT swing</p>
	<p>Child lock</p>

<b>MASTER / SLAVE</b>	Master/slave wired controller
 /  /  / 	Auto/low/middle/high fan speed
	Auto mode
	Cooling mode
	Heating mode
	Fan mode
	Dry mode

## • Operation

### Special function operation index

Function	Operational approach
Function selection	Under ON state, after turning on the back light, press  for 5s.
Forced cooling	Under cooling mode OFF state, press  for 5s, buzzer buzzing 2 times, and screen displaying LL
Forced heating	Under heating mode OFF state, press  for 5s, buzzer buzzing 2 times, and screen displaying HH
Child lock	After turning on the back light, press   together for 5s to set or cancel child lock, buzzer buzzing 1 time.
Temp. compensation	Under OFF state, after turning on the back light, press  for 5s, then adjust by  /  , and confirm by  .
Forced defrosting.	Under state of ON + heating mode + 30°C(if ECO mode is set, change temp. to max limit) + high fan speed, press  6 times within 5s, buzzer buzzing 3 times.
ECO- cooling	Eco cooling mode parameter adjusting: under ON state, cooling mode, 30°C set temp., press   together for 5s to enter adjustment; Parameters will be shown at first two 8 segments on the upper right corner of room temp. display area; Press  /  to adjust and press  to confirm.
ECO- heating	Eco heating mode parameter adjusting: under ON state, heating mode, 16°C set temp., press   together for 5s to enter adjustment; Parameters will be shown at first two 8 segments on the upper right corner of room temp. display area; Press  /  to adjust and press  to confirm.
Error inquiry	After turning on back light, press  for 5s to enter error inquiry state; under error inquiry state, press  for 5s to clear current and historic error code.
Wired controller mode setting	Under OFF state, after turning on back light, press  for 10s to enter setting, then press  /  for adjustment and press  for confirmation.
Shift from Celsius degree to Fahrenheit degree	Adjust set temp. to 30 degree Celsius (if ECO temp. limit is set, change to max temp.), then press  for 15s to change to Fahrenheit degree.
Shift from Fahrenheit degree to Celsius degree	Adjust set temp. to lowest degree Fahrenheit (if ECO temp. limit is set, change to min. temp.), then press  for 15s to change to Celsius degree.



## Dip switch definition

### 8 bits dip switch (SW1)

SW1	ON	OFF	Default
Sw1-1	Slave wired controller	Master wired controller	OFF
Sw1-2	Displaying room temp.	Without displaying room temp.	OFF
Sw1-3	Collect ambient temp. from PCB of indoor	Collect ambient Temp. from wired controller	OFF
Sw1-4	Non-volatile memory invalid	Non-volatile memory valid	OFF
Sw1-5	Old protocol (models developed before Aug. 2013)	New protocol	OFF
Sw1-6	back light always on	back light on for 15s without operation	OFF
Sw1-7	UP/DOWN swing + LEFT/RIGHT swing	UP/DWON swing	OFF
Sw1-8	Reserved	Reserved	OFF


### 4 bits dip switch (SW2)

SW2	ON	OFF	Default
Sw2-1	Mode set limit	Normal	OFF
Sw2-2	Buzzer no buzzing when pressing key (buzzer normally when using remote control)	Normal	OFF
Sw2-3	Reserved	Reserved	OFF
Sw2-4	Reserved	Reserved	OFF



## Initialization

Power on and starts initialization 2 seconds later, 88.8 on top right corner and 88.8 in the middle will alternately flash until initialization finished.



## Audible alert



Press  to power on or power off, buzzer rings one time. When receiving other commands, also ring one time; if invalid command, no alert; If ring three times when sending commands to HW-BA1 from remote controller, it means there is conflicting setting.

## Backlight and screensaver

- (1) Power on, back light comes on,  green light comes on; Power off, back light goes out,  green light goes out.
- (2) If SW1-6 is on, there is no screensaver, backlight is always on after power on, backlight goes out if no operations within 15s.
- (3) If SW1-6 is off, there is screensaver, backlight goes out if there is no operation within 15s after power on.

## Key operations

Power on/off  Press  to power on or power off;





- Under the condition that unit is switched off in cooling mode, long press  for 5s, buzzer rings twice quickly and indoor unit enter forced cooling mode, "LL" flashes in ambient display area (on top right corner), press ON/OFF button or receiving remote signal to quit forced cooling mode.
- Under the condition that unit is switched off in heating mode, long press  for 5s, buzzer rings twice quickly, indoor unit enter forced heat in mode, "HH" flashes in ambient display area (on top right corner), press ON/OFF button or receiving remote signal to quit forced heating mode.

## Mode key :

- Press  to switch mode.
- There is independent fan speed, temperature in each mode.

	Mode	Fan speed	Temperature
Initial State	Auto	Auto	24°C
	Cool	High	24°C
	Dehumidify	Auto	24°C
	Heating	Auto	24°C
	Fan	Low	No (Initial temperature is 24°C, changes according to indoor unit)












### Fan speed key :

- There is 3 speed under fan mode, low, mid, and high, under other mode, there are 4 speed, low, mid, high, auto.
- Fan speed display, low , mid , high , auto 





### Temp+/- key / :

- Press temperature+/- to change speed by 0.5°C;
- Temperature range under Auto, Cooling, Dehumidify, Heating: 16°C~30°C (If ECO is set, temperature range will change according to the setting parameters).
- Temperature is set independently under Auto, Cooling, Dehumidify and Heating mode, setting temperature under each mode will be saved even mode is changed or power off.
- Under fan mode, Temp+/- key doesn't work;











### Swing function (By change SW1-7 to make let-right swing available or not) :

**Under ON state**, long press  for 5s when unit is running to enter cycle function, all function icons displays,  swing icon flashes(default), press  /  to switch different functions:  up-down swing →  ECO →  filter (only when there is filter tip, this function will be in the function cycle) →  air exchange →  left-right swing (when SW1-7 is on) →  up-down swing; Currently chosen icon flashes, press  to choose the selected function; if this operation has been set, repeating this operation will deselect this function.






### Filter clean reminding and filter reset :

cumulative time of filter is up,  display on wired controller screen, when unit is running, make backlight on and long press  for 5s to enter cycle function, when  flashes, press  to select filter reset.



### Adjust ECO parameters :

- Adjust cooling ECO parameters: Switch on indoor unit, set cooling mode, 30°C, long press  +  for 5s, parameters will be displayed by 2 eight-segment LED in ambient display area (top right corner of screen). Press  /  to change parameters and press  to select. Default value is 23°C, so temperature range under cooling and dehumidify mode is 23-30°C.
- Adjust heating ECO parameters: Switch off indoor unit, set heating mode, 16°C, long press  +  for 5s, parameters will be displayed by 2 eight-segment LED in ambient display area (top right corner of screen). Press  /  change parameters and press  to select. Default value is 26°C, so temperature range under heating mode is 16-26°C.



### Child lock:

Press  and  at the same time and hold for 5s to set Child lock function, when child lock function is successfully set  will display and buzzer rings one time. If child lock function is valid now, press  and  at the same time and hold for 5s to cancel Child lock function, child lock icon disappears and buzzer rings one time.





### Central/Lock function:

- If  displays on screen, it means central lock, unit can only be controlled by central controller, wired controller is invalid now. If screensaver is there, press any key to quit. If parameters changed by central controller, parameters on wired controller will automatically change.
- If  displays on screen, wired controller can only switch on/off indoor unit.


### Fahrenheit setting and display:

- Highest Fahrenheit display is 99°F even when ambient temperature exceeds 37°C.
- Under lowest Fahrenheit temperature (lowest temperature is 60°F when ECO is not set, if ECO is set, lowest temperature is the lower limit of ECO mode), long press  for 15s to switch to Celsius; highest temperature is 30°C (it's 30°C if ECO is set; it's upper limit of ECO mode), long press  for 15s to switch to Fahrenheit.




## Set temperature compensation:

- When unit is off, make backlight on, long press  for 5s to set temperature compensation. Temperature value will display by the first eight-segment LED which is in the ambient display area, range is  $-4^{\circ}\text{C}\sim+4^{\circ}\text{C}$ , default is  $0^{\circ}\text{C}$ , set by pressing  / , and press  to confirm.
- Even Fahrenheit display is chosen Celsius is used during communication. Setting range is  $-8^{\circ}\text{C}\sim+8^{\circ}\text{C}$ .

## Forced defrosting:

Under the condition that indoor unit working at heating mode, high speed,  $30^{\circ}\text{C}$  (If ECO is set, use the upper limit temperature of ECO mode), press  6 times, within 5S, buzzer rings 3 times and wired controller send forced defrosting command to indoor unit.





## How to check error:

- If there is error  will display.
- Check error: Make backlight on, long press  for 5s, history error will be displayed by 2 eight-segment LED which is on top right corner, current error will be displayed by 2 eight-segment LED which is in the middle area, if no error, display "--", the eight-segment LED after decimal shows unit sequence number, 0~F corresponds to 00~15 indoor unit.
- Clear error codes: Long press  for 5S under error inquiry mode to clear current error and history error, press any key or no operation within 10S to quit error inquiry; press ON/OFF to quit error inquiry directly and unit will be switched on or switched off.
- Communication error: Communication with indoor unit is abnormal for continuous 4 minutes, wired controller shows error 07, if communication recovers, error will disappear automatically.
- If indoor unit is using temperature sensor in wired controller, temperature sensor of wired controller is short circuit or open circuit for continuous 2 minutes, wired controller show error 01.
- Other error pls refer to error list in indoor user manual.






## Mode restriction function:

- If SW2-1 is on, mode restriction function valid. Mode key is invalid, press mode key, buzzer rings but mode cannot be changed, current mode will flash 3S to tell that current mode cannot be changed.
- Under mode restriction mode, mode cannot be changed by mode key on wired controller, but mode can be changed by other source, like remote controller send signal to wired controller, central controller, change indoor mode directly by remote controller etc.
- After changing dip switch, must power off and on again to make new setting valid.



## Check parameters (only applies to some models):

- Make backlight on, long press  for 10s to check parameters, double eight-segment LED in the middle shows indoor address(00-15), the eight-segment LED after decimal display AbCdEF, "188" on top right corner shows detailed parameters.
- Press  to switch indoor sequence no. Press  and  to switch AbCdEF.
- Quit inquiry mode if no operation within continuous 10s; press mode key under parameter inquiry mode to quit directly instead of changing mode; press ON/OFF under parameter inquiry mode, unit will be switched on/off.

## Indoor address inquiry and setting (Applies to some model):

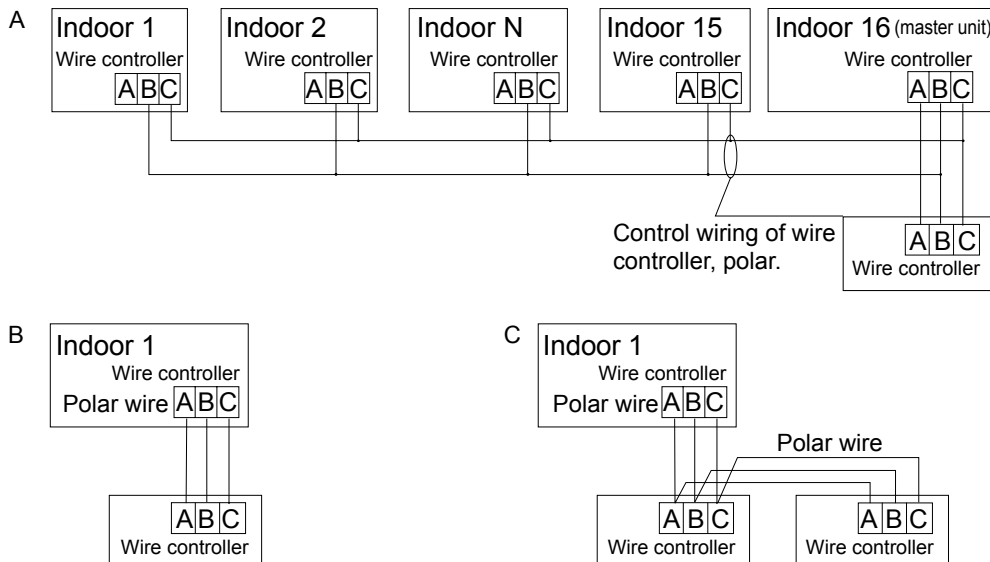
- Make backlight on, long press  for 10s to check address and current status of indoor unit, the eight-segment LED after decimal display 0~F which stands for indoor unit sequence no 00~15. double eight-segment LED in the middle shows indoor communication address(00-15), "188" on top right corner shows central address.
- Communication address 0~63, central address 0~127.
- Press  to change indoor address, if communication address flashes, it means it can be changed by wired controller, press  /  to change, press  to confirm, and start to change another indoor address.
- No operation within continuous 10s to quit inquiry and setting, if press ON/OFF under inquiry and setting mode, quit and indoor unit will be switched on/off.

**Mode combination setting:**

- Keep indoor unit off, make backlight on, long press  for 10 to enter mode combination setting. In temperature display area relevant value will display, default is 0, press  to change.
- 0-Auto-Heat-Dehumidify-Cool-Fan  
 1-Cool -Heat-Dehumidify  
 2-Cool  
 3-Heat  
 4-Heat -Dehumidify -Cool -Fan  
 5-Dehumidify -Cool -Fan  
 6-Heat-Fan
- There is mode combination in indoor PCB, choose the intersection between above mode combination and indoor mode combination.

• **Wired Controller Wiring Instruction**

**Wiring Connections of Wire Controller**



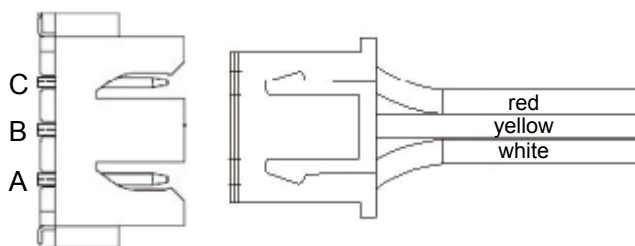
**Notice:**  
 For wired controller connection, please do follow the corresponding indoor unit installation manual's instruction.

**Communication wiring**

Communication wiring length (m/ft)	Dimensions of wiring
≤ 250m	0.75mm <sup>2</sup> x3-core shielded wire

\*One side of the shielded sheet of communication wire must be earthed.

## Wiring diagrams



## Installation diagrams

<p>1. To take the front panel and back panel apart by screw driver.</p>	
<p>2. To fix the back panel.</p>	
<p>3. Insert connector of wire harness into terminal block.</p>	
<p>4. Finally, recombine the front panel and back panel, just like below shows</p>	

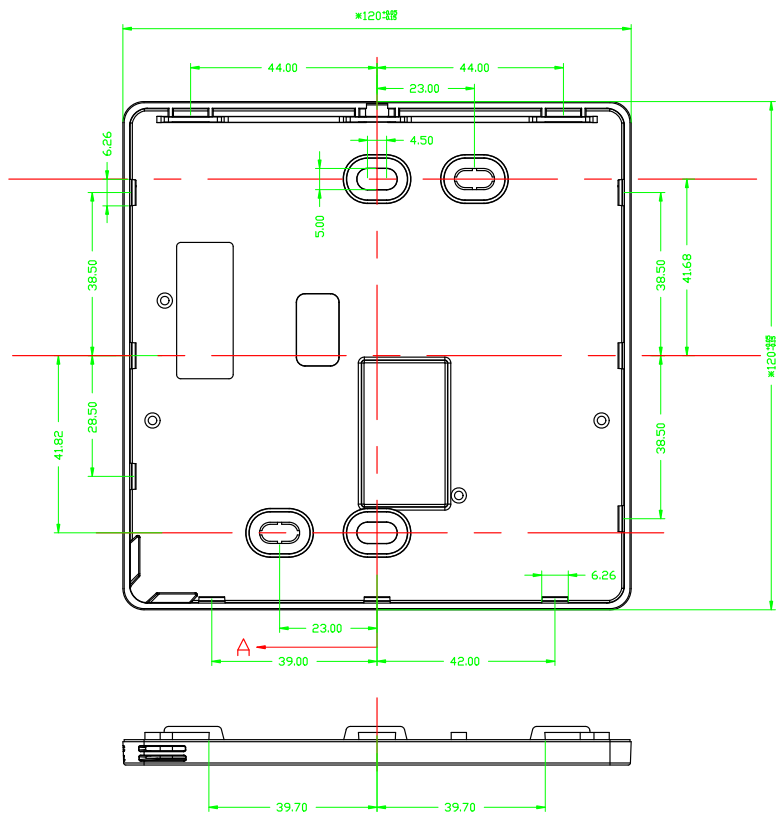
## 3.4 YR-E16A



MRV	LCAC			
	Smart Power	Super Match	R410A ON/OFF	R22 ON/OFF
√	√	√	√	

- On/Off, Mode, Fan speed, Temperature setting, Swing.
- Individual & Group control (Max 16 indoor units)
- Large button
- °C/°F selection; Sensitivity  $\pm 0.5^{\circ}\text{C}$  ( $\pm 1^{\circ}\text{F}$ )
- Weekly timer.
- Individual louver control for Smart Power Cassette
- Static pressure setting
- Simple and Smart design, 120\*120\*17.8mm








### Dimension



### Interface Display

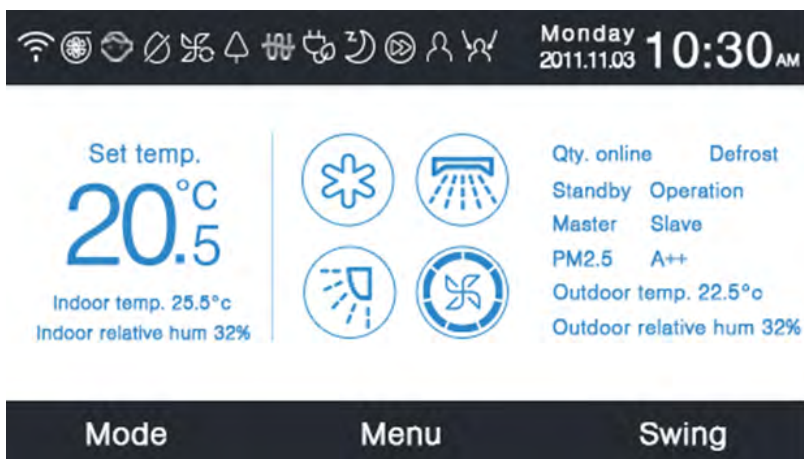


## Key





	According to the prompt message, mode key in the main interface, return key in other interface.
	Intelligent key, press it to intelligent mode directly.
	Left/Right key, fan speed adjustment key, swing angle adjustment key in the main interface, direction adjustment key in other interface.
	Up/Down key, temp. adjustment key in the main interface, shift direction and value adjustment key in other interface.
	Menu key in the main interface, enter key in other interface.
	Swing key in the main interface, back to the main interface through the key in other interface. When the swing function is invalid, press the key to adjust fan speed.
	On/Off key

## • Parts and Functions











### Main Interface Display









### Icon Instruction

	Quiet function.
	Turbo function.
	Child lock function. Pressing Left and Right keys at the same time in the main interface for 5s can set or cancel the function.
	Forced defrost function.






















	Ventilation function
	Health function.
	Quick start function.
	Night quiet function, the function operations only in the night when it is set.
	Electrical heating.
	Health airflow.
	Health airflow up.
	Health airflow down.
	Sleep function.
	Error code function, the icon will display in the main interface when the wired controller or the indoor unit linked to controller is malfunctioning.




## • Parts and Functions

	Schedule.
	Filter.
	Temp. ECO.
	Motion sensing.
	Motion sensing follow.
	Motion sensing evade.

Monday  
2011.11.03 10:30 AM

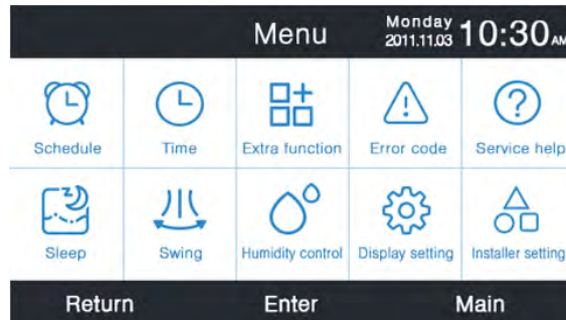
Date, week, clock display area, the type of date can be changed through the time function.

	Temperature display area, set temperature can be adjusted by Up/Down key. If energy saving function is not set, the range of set temperature is 16°C-30°C(60°F-86°F), or the adjustment range will be limited. The default lowest temp. of cooling/dry mode is 23°C(74°F), the default highest temp. of heating mode is 26°C (78°F).The adjustment step is 1°F when temp. is displayed in Fahrenheit, the range of set temp. is also limited by energy saving function.										
	Indoor temperature display area, the value may be from the indoor unit or the wired controller, the display of this area can also be canceled through function setting.										
	Indoor humidity display area.										
	<p>Mode.</p> <table border="1"> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Intelligent</td> <td>Cooling</td> <td>Heating</td> <td>Fan</td> <td>Dry</td> </tr> </table> <p>The mode cycle depends on mode setting in basic setting function.</p>						Intelligent	Cooling	Heating	Fan	Dry
											
Intelligent	Cooling	Heating	Fan	Dry							

 	Up/Down swing and Left/Right swing function.
	Fan speed, the cycle type of fan speed can be set through basic setting.
Qty. online	The quantity of indoor units linking to the wired controller.
Defrost	Defrost function.
Standby	The state of indoor unit, this area also can display "operation".
Master	The state of wired controller, this area also can display "slave". "Master" means the wired controller major controller, "Slave" means the wired controller only can control parts of functions.
PM2.5 A++	Reserved function.
Outdoor temp. 22.5°	Outdoor temperature display area. It can be set whether display or not.
Outdoor relative hum 32%	Outdoor humidity display area. It can be set whether display or not.
Above functions are only valid for parts of model.	

## • Operation

Press menu key in the main interface to menu interface.



## Schedule

Schedule concludes segmented timing and random timing, it can be selected through displaying setting.

### Segmented timing

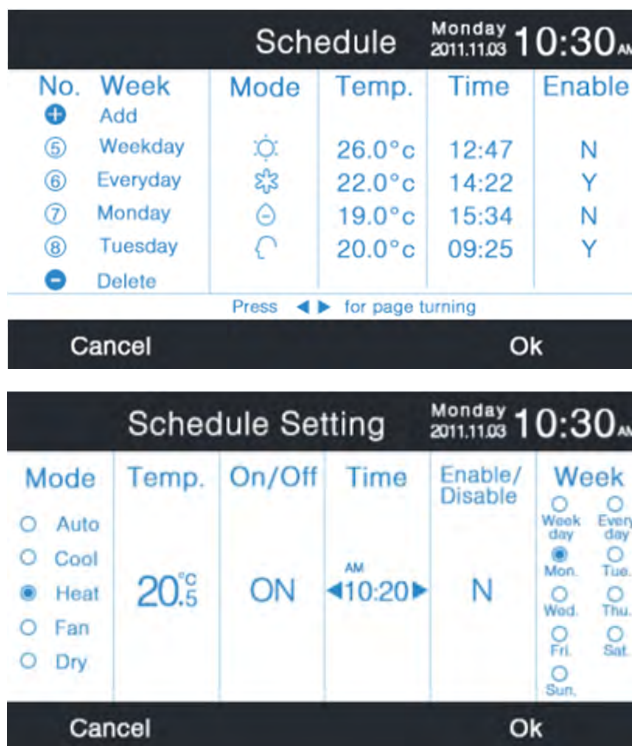
- The segmented timing will be operated only in cooling or heating mode. Time can be adjusted in 24 hours, the default format of time display is 12-hour. Temperature can be adjusted from 60°F to 86°F (16°C to 30°C), "OFF" also can be set meaning power off.
- Firstly, the left and right arrows flash beside the time of wake-up, then press enter key, the arrows will be static, continue to press left or right key to adjust time and enter key to confirm. Four direction keys can move the arrow when they flash.
- Press ok key to confirm the setting according the prompt below the screen.
- The default value is the same to the figure below.

Schedule		Monday 2011.11.03 10:30 AM			
		Heat (mon. - fri.)	Cool (mon. - fri.)	Heat (sta. - sun.)	Cool (sta. - sun.)
Wake	◀ 6:00 am ▶	21.0°C	OFF	21.0°C	OFF
Leave	8:00 am	21.0°C	29.5°C	17.0°C	17.0°C
Return	6:00 pm	21.0°C	29.5°C	OFF	26.0°C
Sleep	10:00 pm	17.0°C	28.0°C	17.0°C	17.0°C
		Cancel		Ok	

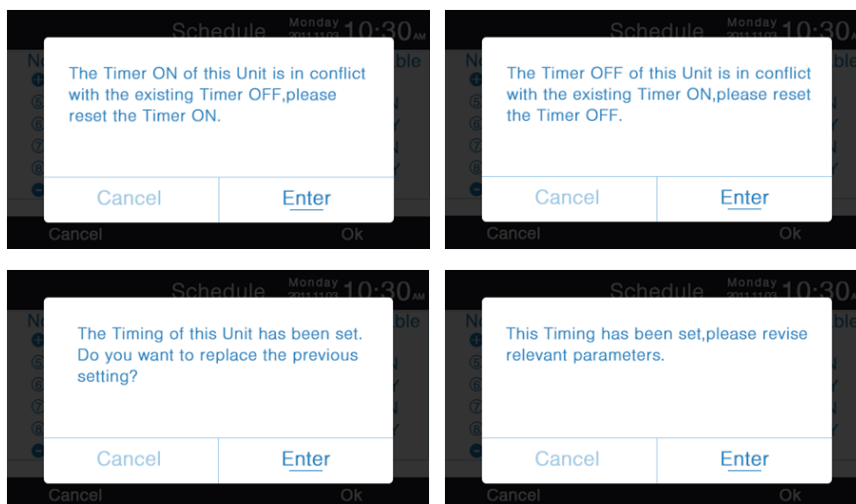
- Keep pressing Left/Right key to accelerate time adjustment.


### Random timing

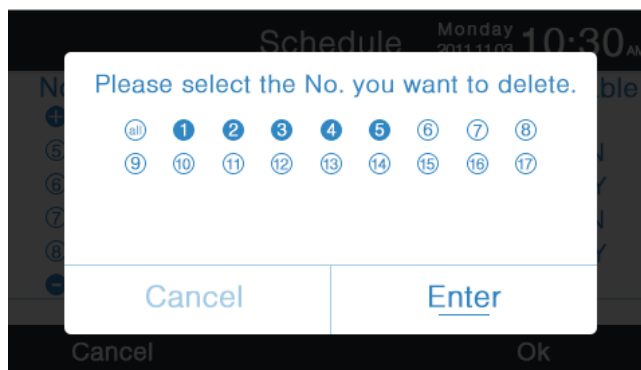
- When  flashes in the schedule adding interface, press enter key to the setting interface.



- Intelligent mode, 24°C(76°F), power off, 12:00, enable and weekday is default.
- If the schedule that are setting has been set before, the interface will prompt you that the schedule is repetitive , you need to cancel it or revise relevant parameters. Press Up/Down key or Left/Right key to shift between “Cancel” and “Ok.”
- If the time of timer on you are setting is conflict with the existing timer off, the interface will prompt you to change the time. In the same way ,the time of timer off need to be different from timer on. In summary, if the later setting is conflicted with the previous, prompting interface will display.

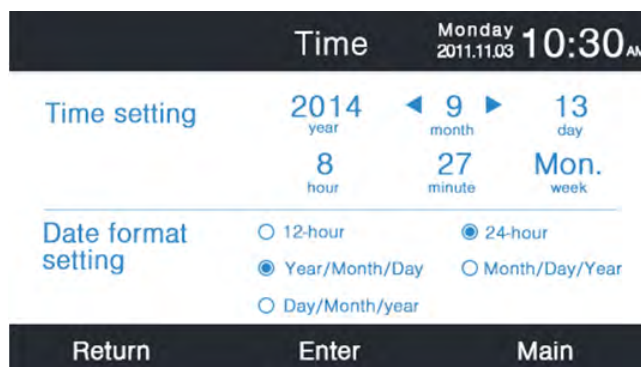


- After setting, press Ok to confirm the timing and back to schedule interface simultaneously.
- In schedule display interface, mode icon in blue color means timer on and the gray mode icon means timer off. Press Up/Down key to select different schedule, Left/Right key to turn page. When the number flashes, press enter key to display the setting interface, it can be revised.
- Celsius and Fahrenheit can be shifted, 12-hour and 24-hour also can be shifted.
- Press enter key to delete schedule when  flashes. The delete interface will display and then choose the number you want to delete through the direction keys and enter key.



## Time

When time icon is flashing, press enter key to the time interface.

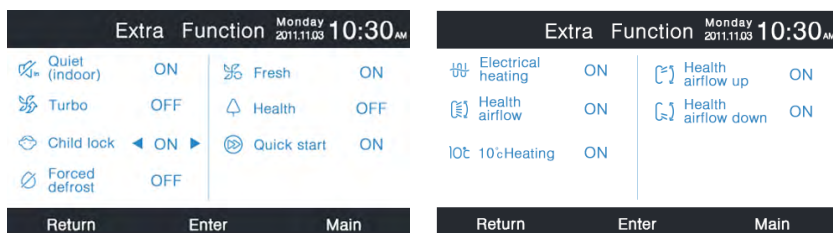


- The default date is December 12th,2014,the time is 12:00PM and the week is Friday. the adjusting way is the same to schedule time adjusting.
- The default format is 12-hour and Month/Day/Year.

## Extra Function

Press enter key to the setting interface when the icon is flashing in the menu.

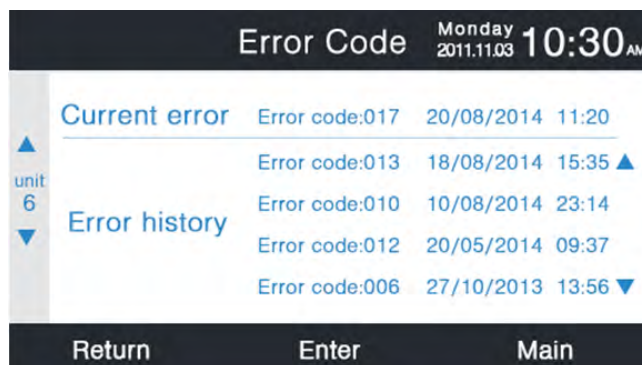
- The default information for each function is decided by indoor unit but child lock. Child lock function is off in default.
- Move the arrows through Up/Down or Left/Right key. Arrows will display statically when you press enter key, then press Left/Right key to choose "ON" or "OFF". After setting, press Up/Down key to confirm and move to the above or underneath function directly or press enter key to set again.
- The corresponding function icon will display in the main interface when set any function in extra function.
- Some functions are reserved for parts of models, the information is gray. Turbo and Quiet function is conflicting, the later setting will cancel the former. The same to health airflow up and down.
- When child lock is set ON, the interface skips to the main automatically, the function also can be set or canceled through pressing Left and Right keys together for 5s in the main interface.



## Error Code

Press enter key to the error code inquiring interface when the icon is flashing in the menu.

- Up/Down key to choose the unit. Left/Right key use for page turning.
- One current error information displays only and thirty five error history information display at most for each unit.
- Press Left and Right keys together for 5s to clear away the error history information of the current unit. Press Up and Down keys together for 5s to clear away the error history information of all the units on line. The combination method is only valid in error interface.



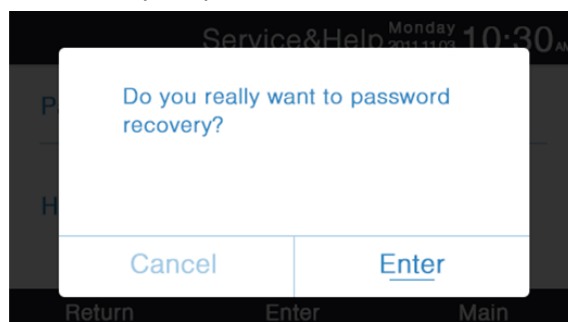
## Service Help

Press enter key to the service help interface when the icon is flashing in the menu.

- Password function concludes password setting and recovery, the default code is 841226. When finished code input, press direction key to cancel or enter, then press enter key to confirm, or continue to press enter key to confirm after inputting six numbers.



- If password recovery is set, the interface will prompt as follows, then cancel or enter.



- Help function is reserved for parts of models. The information is gray when it is invalid.

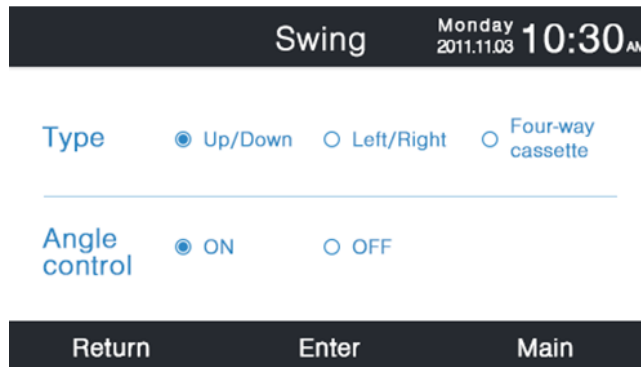
## Sleep

- The function is reserved for some models.

## Swing

Press enter key to the interface when swing icon is flashing in the menu. Code is needed.

- The default information of swing type and angle control is decided by indoor unit. When type and angle control are set in a different combination, the main interface will display corresponding icon and then swing function will be refresh by indoor unit at last.



- If some combination is limited, the information will be gray.
- If no swing is set, swing key in the main interface is used for adjusting fan speed.
- If Up/Down and Left/Right swing with no angle is set, swing key in the main interface controls open and close of swing.
- If Up/Down and Left/Right swing with angle is set, the swing icon will flash after pressing swing key in the main interface, then press Left/Right key to adjust angle. Swing key is used for shifting Up/Down swing and Left/Right swing. There is no operation for 5s after swing icon flashes, the icon will be static indicating quitting adjustment.
- If indoor unit is four-way cassette model, swing function in the menu is invalid. Swing key in the main interface is used for shifting deflector, the order is four deflectors→deflector 1→deflector2→deflector3→deflector4→four deflectors. The deflector flashes for 5s when it is selected ,then press Left/Right key to adjust swing angle of this deflector at the same time.

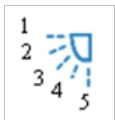


- Angle definition:

Up/Down swing:

1stands for angle 1,2 stands for angle 2,3 stands for angle 3,4 stands for angle 4,5 stands for angle 5,1 and 2 stand for health airflow up,4 and 5 stands for health airflow down, the circulation of 1→2→3→4→5→4→3→2→1 stand for automatic swing.

Up/Down swing will be changed in sequence as follows: angle 1→angle 2→angle 3→angle 4→angle 5→automatic swing→angle 1.



Left/Right swing:

Left/right swing can be adjusted as per the user's

requirement. The circulation of 1→2→3→4→5→4→3→2→1 stands for automatic swing.



- The default angle in different mode as follows:
- Up/Down swing

	Intelligent	Heating	Cooling	Dry	Fan
Angle	Angle 1	Angle 5	Angle 1	Angle 1	Angle 1

Left/Right swing

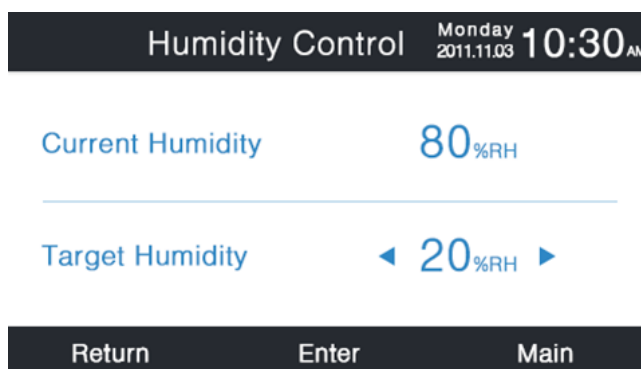
	Intelligent	Heating	Cooling	Dry	Fan
Angle	Angle 1	Angle 1	Angle 1	Angle 1	Angle 1

Four-way cassette

	Intelligent	Heating	Cooling	Dry	Fan
Deflector	Four deflectors	Four deflectors	Four deflectors	Four deflectors	Four deflectors
Angle	Angle 3	Angle 5	Angle 3	Angle 3	Angle 3

## Humidity Control

Press enter key to the humidity control interface when the icon is flashing in the menu. The function is reserved for some models. When it is invalid, the icon is gray.



- Current humidity is decided by indoor unit and can not be adjusted through wired controller.
- Target humidity can be adjusted. Press enter key to make arrows static, then adjust the humidity by Left/Right key, press enter key to confirm at last.

## Display Setting

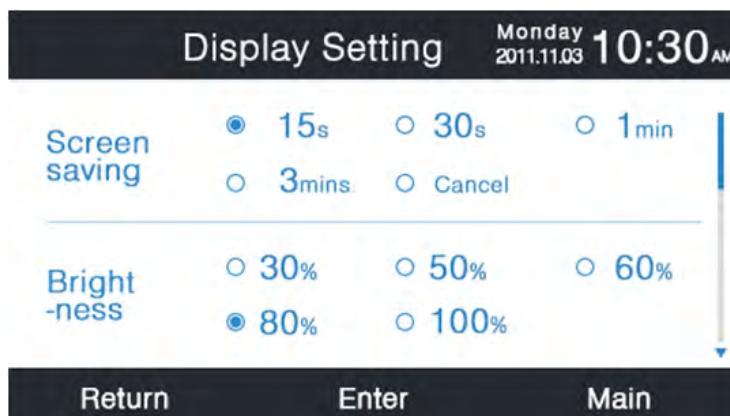
Press enter key to the next interface when the icon is flashing in the menu.

- Screen saving

There are five kinds of screen saving time. The time means that how long screen light continues after no operation. "Cancel" means that the screen light will never dose.

- Brightness

The function is used for controlling the light intensity.





## Language

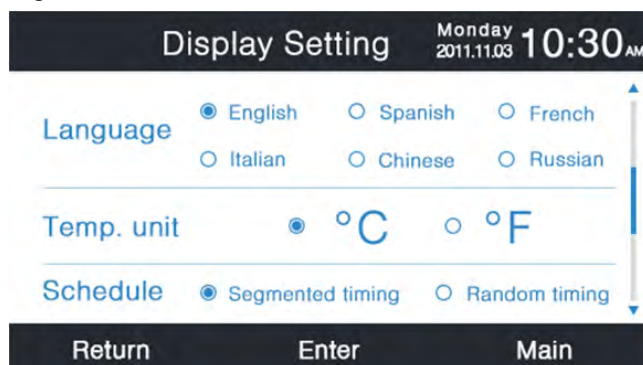
It is only valid for some models.

## Temp. unit

Celsius and Fahrenheit can be selected through the function.

## Schedule

Segmented timing and Random timing can be set.



## Indoor temperature display

If the function turns on, the main interface will display indoor temperature. In opposite, the main interface will not display indoor temperature.

## Indoor humidity display

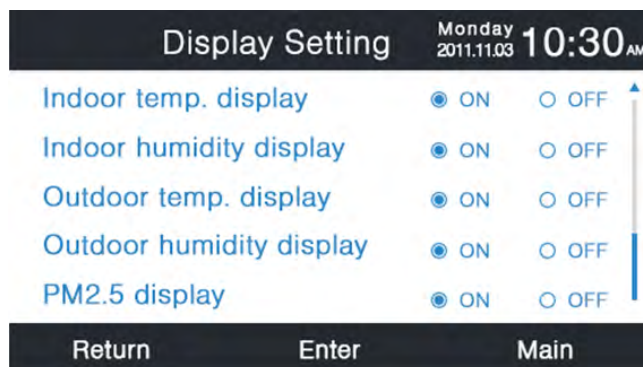
It is only valid for some models.

## Outdoor temperature display

It is only valid for some models.

## Outdoor humidity display

It is only valid for some models.

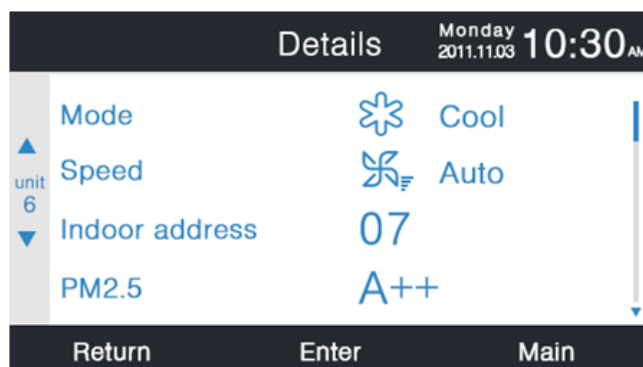


## Installer Setting

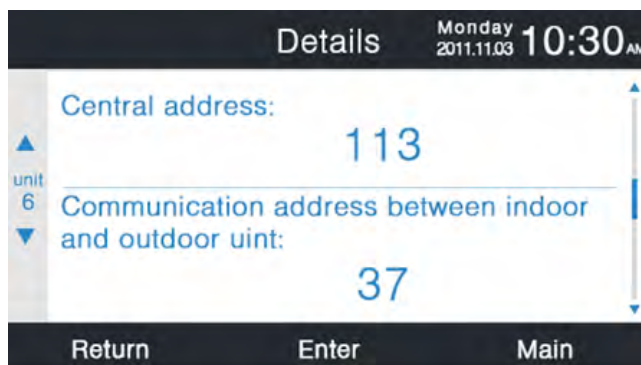
Press enter key to enter the function when the icon is flashing in the menu.

### Details

The corresponding parameter information will be displayed in this function. Up/ Down key to adjust unit number, Left/Right key to turn page. Some information is gray that can not be inquired.



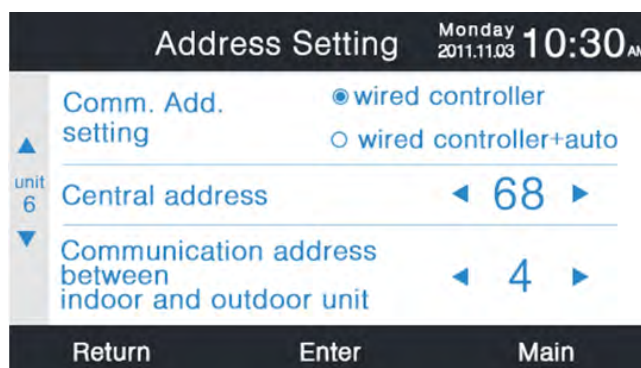




### Address setting

The default entering code is 841226. The communication address can be set through two ways, one is wired controller set, the other is wired controller and automatic competing set.

Central address and communication address between indoor and outdoor unit both can be adjusted according to practical situation.

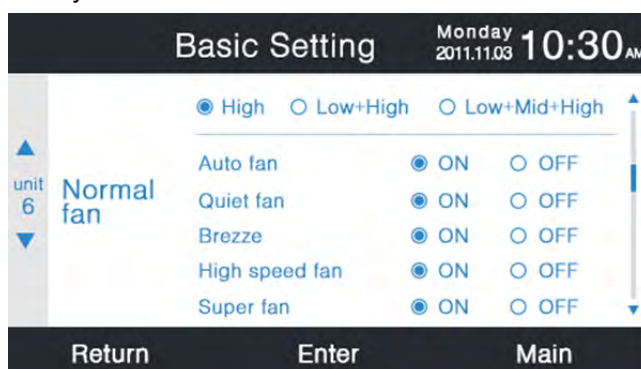


### Basic setting

The information of model is decided by indoor unit and can not be changed, the same to capacity information.

### Normal fan

The default information is decided by indoor unit.



### Mode selection

Different modes combination can be set according to practical application.



### New/old protocol

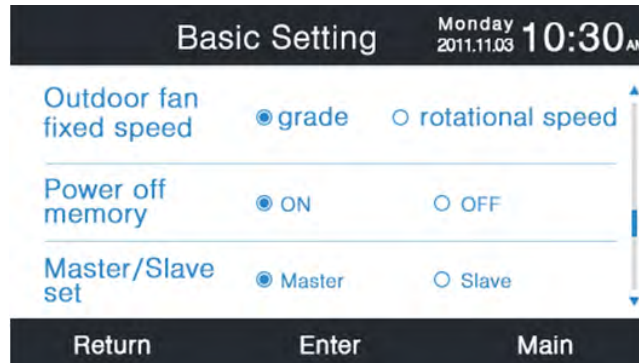
Self-adaption is default. The function is used for basic setting. You'd better not reset it, or the controller may not work normally.

### Power off memory

If the function is set on, wired controller will maintain the previous state in temperature, fan speed, etc from in outage to power up again.

### Master/Slave set

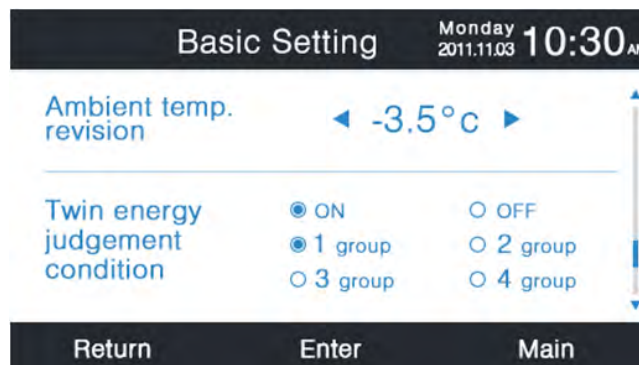
Wired controller can be set as master controller or slave controller through this function. Slave controller only can control parts of function.



### Ambient temperature revision

The revision value is only valid for wired controller environment temperature

Press enter key to make the arrows static and adjust the temperature by Left/Right key.



### Indoor temperature collection

The environment temperature may come from wired controllers or indoor unit through setting. The same to indoor humidity collection.



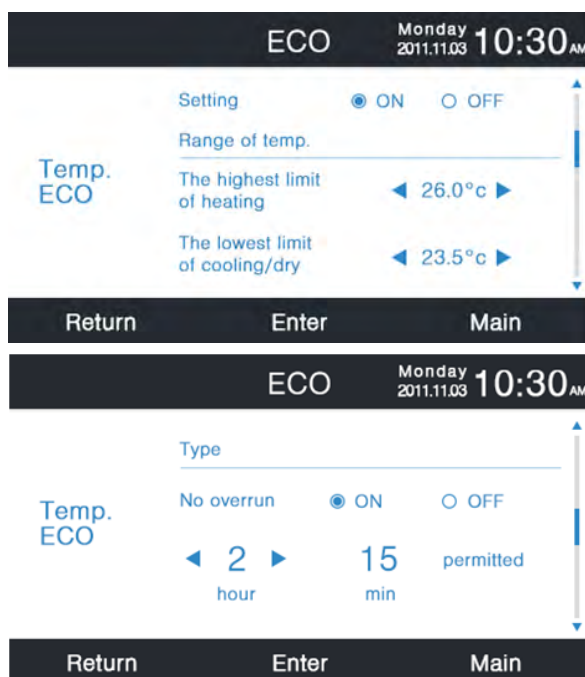
In basic setting interface, press Up/Down key to adjust unit number; press Left/Right key to move the cursor. Some functions are reserved for some models and the information is gray.

## ECO

ECO function is default set as OFF. The default highest temperature is 78°F (26°C) in heating and the default lowest temperature is 74°F (23°C) in cooling/dry mode. It is default set as no exceeding of limit.

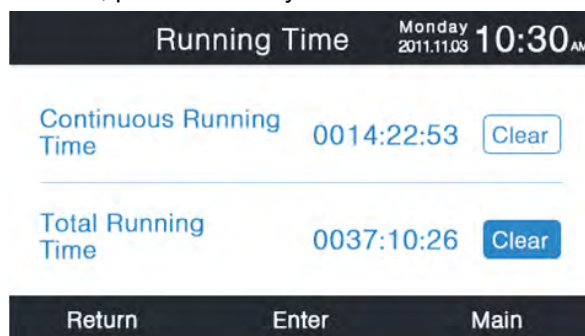
Four direction keys can move the cursor, when the arrows flash, press enter key to stop the flashing and press Left/Right key to adjust the value, then press enter key again to confirm.

After setting ECO function, the temp. adjustment will be limited. If overrun is set, the temp. can be adjust out of ECO rage in allowable time.



## Running time

The function records both continuous running time and total running time. Power on means operate. When the bottom color of "Clear" change into white, press enter key to clear the accumulative running time.



## Vip priority choice

The function is only valid for some models.

## Special setting

ESP grade can be set, the setting method is same to the instruction mentioned above .

## Parameter setting

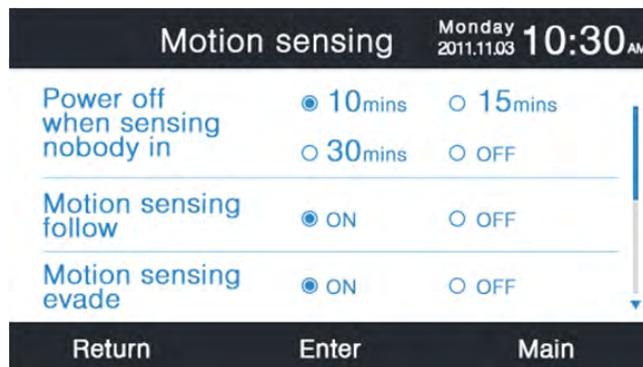
The function is only valid for some models.

## Eeprom setting

The function is only valid for some models.

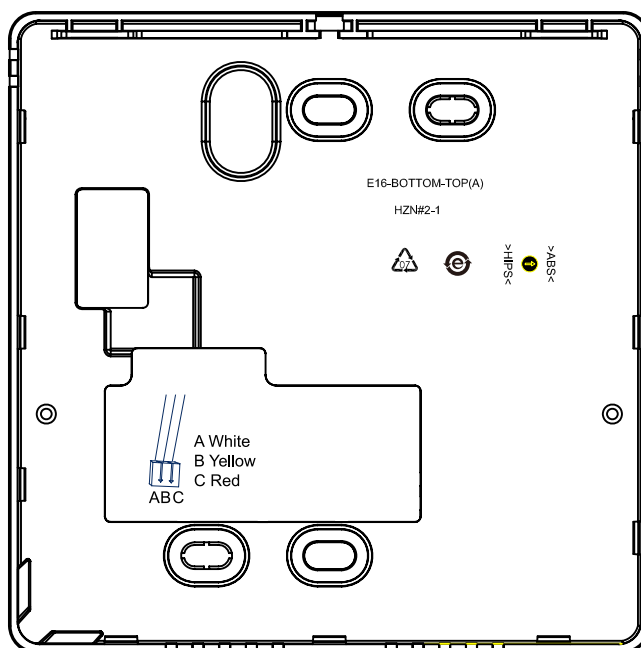
## Motion sensing

The function is valid for some models. When motion sensing follow or evade is set, the angle of deflector will be decided by the man's location, the setting swing angle in the main interface is invalid at this time. When the function of automatic power off is set, indoor unit will power off after sensing nobody in for the setting time. All the functions in the interface default "OFF".



• Wired Controller Wiring Instruction

1. First, put communication wire through the hole in the back cover.
2. Connect communication wire to CON4 port of wired controller. Finally put the front cover of wired controller to back cover to complete the installation.



### 3.5 HW-CA101AGK



- Wired controller for Duct type Fan Coil
- ON/OFF
- Heat/Cool/Auto
- Fan speed: High/ Medium/ Low/ Auto
- RS-485
- Power supply: 220V

## • Parts and Functions

### Technical Parameters

AC220-230V, 50Hz/60Hz

Output Switch type: Fan switch/ Valve switch

Function: Cooling/Heating

Maximum loading output: 3A

Wiring port ≤ 1.5mm<sup>2</sup>

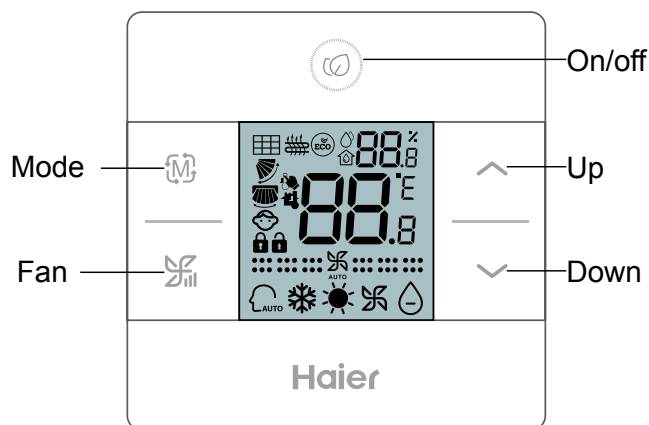
Working temp: 0-50°C, Precision by 0.5°C,

Deviation by ±1°C.

Suitable System: 2-pipe

For valve: 3-line valve
































































### Interface Display




### Key

LED ICON	Description	
88.8 <sup>°C</sup>	Eco temp/Failure code	
88.8 <sup>°C</sup>	Up Room temp/Set temp	
❄️	Cooling	☀️ Heating
🌀	Fan	
👤	Child Lock	
🔒	Central	🔒 Lock
🌿	ECO icon, if ECO function is set, it will display this icon.	
👤	Set temp. display	👤 Room temp. display

## Function operation

<p><b>On/off</b> Press  button to power on / power off the unit.</p>
<p><b>Mode Selection</b> Press  button to switch the mode from Cooling-Heating-Fan circularly Remark: For more detail, refer “Mode combination setting”</p>
<p><b>Temp. adjustment</b> Press  or  to adjust the temperature.</p>
<p><b>Fan adjustment</b> Press  to adjust the fan speed , The icons displayed as below: Low  ; Medium    High      Auto    →   →    →   There is 3 speed under fan mode, low, mid, and high, under other mode, there are 4 speed, low, mid, high, auto.</p>
<p><b>RS-485 protocol and Modbus protocol</b> Under OFF state, after turning on the back light, press together  and  for 15s, Parameters 00 or 01 will be shown at room temp. display area,00 stands for RS-485 protocol of VRF, 01 stands for Modbus protocol of VRF, set by pressing   , and press  to confirm. the screen starts initialization. Default value is 00.</p>
<p><b>ECO</b> Under On state, after turning on the back light, long press for  10s to enter Eco setting, Eco icon flashes, press  to confirm or cancel the function.</p>
<p><b>Child lock</b> After turning on the back light, press   together for 5s to set or cancel child lock, buzzer buzzing 1 time. when child lock function is successfully set,  will display.</p>
<p><b>Temp. compensation</b> When unit is off, make back light on, long press  for 5s to set temperature compensation. range is -9°C~+9°C,interval is 0.5°C, default is 0°C, set by pressing  /  , and press  to confirm. Room temperature value will be displayed with temp. compensation.</p>
<p><b>ECO- cooling parameter adjusting</b> Eco cooling mode parameter adjusting: Under ON state, cooling mode, 30°C. Long press  /  together for 5s to enter adjustment; Parameters will be shown at first two 8 segments in middle temperature display area; Press  /  to adjust and press  to confirm. Defaulted value is 23°C.</p>
<p><b>ECO- heating parameter adjusting</b> Eco heating mode parameter adjusting: under ON state, heating mode, 16°C. Long press  /  together for 5s to enter adjustment; Parameters will be shown at first two 8 segments in middle temperature display area; Press  /  to adjust and press  to confirm. Defaulted value is 26°C.</p>
<p><b>Error inquiry</b> After turning on backlight, press  for 5s to enter error inquiry state; under error inquiry state, press  for 5s to clear current and historic error code. Current error code shows in middle temperature display area; Historic error shows at upper right corner area.</p>
<p><b>ID address setting</b> Under OFF state, after turning on backlight, press  for 10s to enter setting, then press  /  for adjustment and press  for confirmation. Address range: 1 (default) -64.</p>
<p><b>Shift from Celsius degree to Fahrenheit degree</b> Adjust set temp. to 30 degree Celsius (if ECO temp. limit is set, change to max temp.), then press  for 15s to change to Fahrenheit degree.</p>
<p><b>Shift from Fahrenheit degree to Celsius degree</b> Adjust set temp. to 16 degree Fahrenheit (if ECO temp. limit is set, change to min. temp.), then press  for 15s to change to Celsius degree.</p>
<p><b>Advanced setting</b> Under OFF state, after turning on the back light, press  for 15s, buzzer buzzing 1 time, entering advanced setting model. The function code displayed on top right corner, Relevant value will be displayed in middle temperature display area ,Press mode button  to switch the function, Press   to adjust the value, press  to adjust function code, press  to confirm and quit.</p>








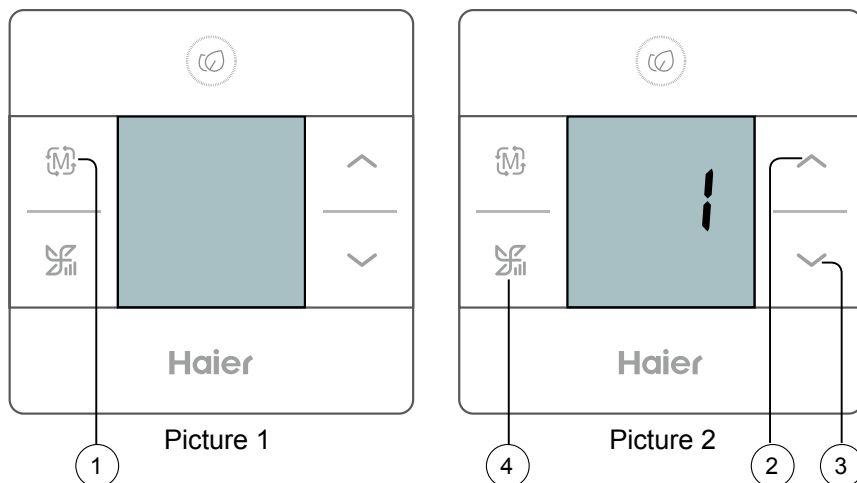
Function code	Function	Value
01	Displaying room temp.	0-Without displaying room temp. 1-Displaying room temp. (Default)
02	Non-volatile memory	0-Valid (Default) 1-Invalid
03	back light	0-Back light on for 15s without operation (Default) 1-Always on
04	Starting temperature difference	1(Default)-5,interval 0.5,1 represents the starting temperature difference is 1°C
05	Protocol	0-RS-485 for VRF (Default) 1-Modbus
06	ID address setting	1(Default)-64.
07	Mode setting	0-Cooling-Heating-Fan (Default); 1-Cooling; 2-Heating; 3-Cooling-Heating; 4-Cooling-Fan; 5-Heating- Fan
08	Hypothermic protection	1. 5 (default), to 0.5 degrees interval, the range of 5-10 degrees, - - means to cancel the low temperature protection. 2. low temperature protection works only during "heating mode + off" state. 3. open the water pipe valve when it is protected. 4. when the room temperature < low temperature protection temperature, the valve is opened. 5. when the room temperature > low temperature protection + 1°C, the valve turn into automatic control.
09	Child lock	0- Lock all buttons(Default) 1-  is valid

• The functions of wired controller

**Wired controller address**

Default: 1, Range: 1-64




Setting method: Under off state as picture 1, Press buttons except  to turn on the backlight, Long press  for 10s, Defaulted address 1 shows on the screen as picture 2, Press  /  to adjust the value, press  for confirmation.






### Control & Display the temp.

With temperature sensor, the temperature accuracy is 0.5°C, the deviation is 1°C, and the Fahrenheit is 1F.  
Setting range: 16~30°C.

The setting temperature is adjusted by the  up and  down buttons, the setting symbols  are displayed when the adjustment is performed, and the ambient temperature is displayed after no operation for 3 seconds.

### ON/OFF




First power on: defaults to power off;

Press  shutdown button to switch on / off.


### Sound

1. Controller buzzer will have sound feedback when press the controller button, press the switch on/off button, when switch on, the buzzer will sound twice shortly, when switch off, the buzzer will sound once long.
2. Press the button, if the operation is available, the buzzer sound once and executes the operation; if the operation is invalid, and the buzzer sounds once and will not executes the operation;
3. If the Remote wireless control setting mode is invalid, buzzer will sound three times and indicate the set mode is invalid.

### Backlight and screensavers:

1. Switch on the controller, controller backlight light up; Switch off the controller, controller backlight off.
2. If the controller have no screensavers function which set by the advanced setting; switch on the controller, controller backlight light up always; switch off the controller, controller backlight off after 15 seconds.
3. If the controller have screensavers function which set by the advanced setting; Switch on the controller, if has not press the button and remote control operation and keep 15 seconds continuously, the controller backlight off.
4. Switch on the controller, the tree leaf logo light up; switch off the controller, the tree leaf logo off ;when the controller is switch off ,press all button except switch on/off button ,controller will not have respond operation ,only light up the backlight; when press the switch on/off button, controller will have respond operation and the backlight light up. When the controller switch off and under the screensavers condition, press all button except switch on/off button only can cancel the screen savers; press the button again will have normally setting operation.
5. If the controller temperature display is the indoor room temperature which set by the advanced setting;When the controller is switch off, controller will display the indoor room temperature.
6. If have 485 and the central or lock function, controller will display this icon whatever the controller is switch on or off.
7. Under the switch on/off state, can set or cancel the child lock function ,and the controller will display the child lock icon .
8.  indicate setting temperature  indicate indoor room temperature.

### Fan speed setting




1. Switch on the controller, change the fan speed by press the fan speed button 

Fan mode: low, middle, high fan speed selection


Other mode: low, middle, high, auto fan speed selection

2. The fan speed setting for different mode will have auto restart function (mode, fan speed, setting temperature have the relational memory),when change the mode, the fan speed also will change to the relational memory fan speed. Not stay at last time mode fan speed.

### Child lock

Setting method: light up back light, press together  and  for 5 seconds continuously, controller display the child lock icon , the buzzer sound once.

Cancel method: light up backlight, press together  and  for 5 seconds continuously,

Controller child lock icon  will disappear, the buzzer sound once.

Under the child lock state; if press the controller button, the child lock icon will flash 3 seconds and buzzer will sound.

## Temperature compensation setting:

1. Switch off the controller (below picture 3),light up the backlight, press the ① fan speed button 5 seconds continuously, enter the temperature compensation setting, the default compensation temperature value is 0.0°C. the compensation temperature value display at the temperature area (below picture 4),the compensation temperature value range is -9°C to +9°C, modify the value by up button ② ^ and down button ③ v,then confirm the setting by the fan speed button ①

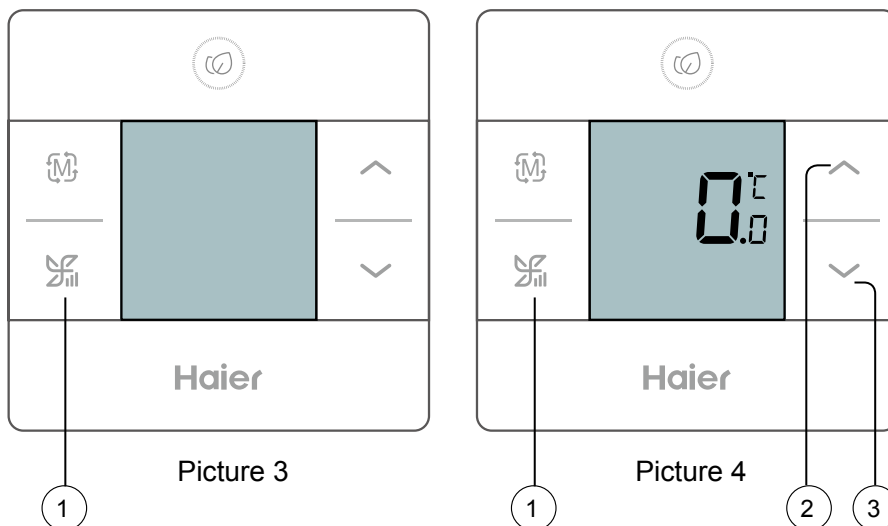
2. Exit condition:

(1)After modify the compensation temperature value, but have not confirm the setting by the fan speed button within 10 seconds, controller will automatic exit the compensation setting and will not save the modify temperature compensation value.

(2) During modify the compensation temperature value, if press the controller mode button, controller will automatic exit the compensation setting and will not save the modify temperature compensation value.

(3) During modify the compensation temperature value, if press the controller switch on/off button, controller will automatic exit the compensation setting and will not save the modify temperature compensation value, and this time controller will not send out the switch on signal to unit.


3. if select the temperature unit is Fahrenheit, the setting range is -18F to +18F.




## Energy saving ECO parameter setting:


1. Cooling mode ECO parameter setting: switch on the controller (see below picture 5),under the condition: cooling mode ,setting temperature 30°C, press ① fan speed button and ② temperature add button together 5 seconds continuously, then enter the setting interface(see below picture 6),the ECO value display at the temperature area, modify the ECO value by up button ② and down button ③ ,then confirm the setting by the fan speed button ① . After modify the value ,but have not confirm the setting by the fan speed button within 10 seconds, or during modify the value, if press the controller mode or switch on/off button, controller will automatic exit the setting and will not save the modify value.The default ECO parameter for cooling mode is 23°C,so the cooling mode setting temperature range is 23-30°C. Cooling mode ECO parameter setting value is 16°C-30°C and valid in cooling mode.

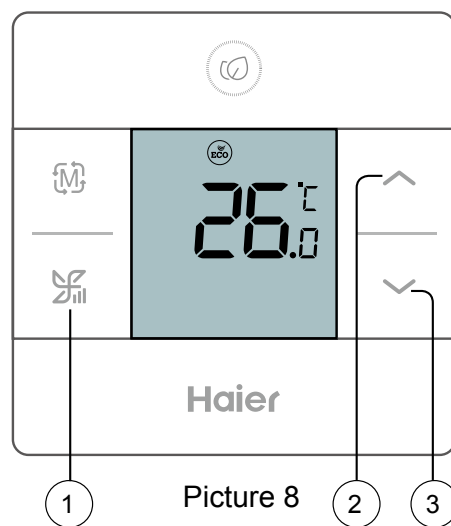
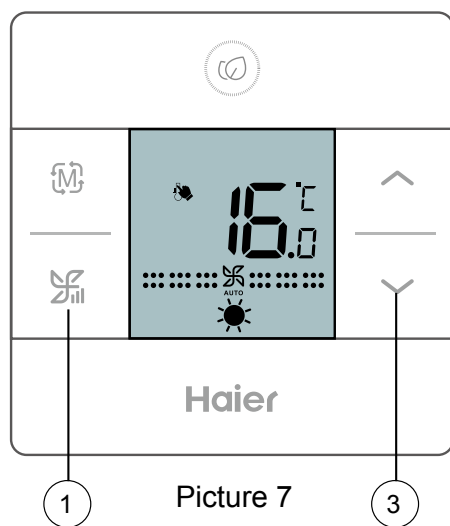
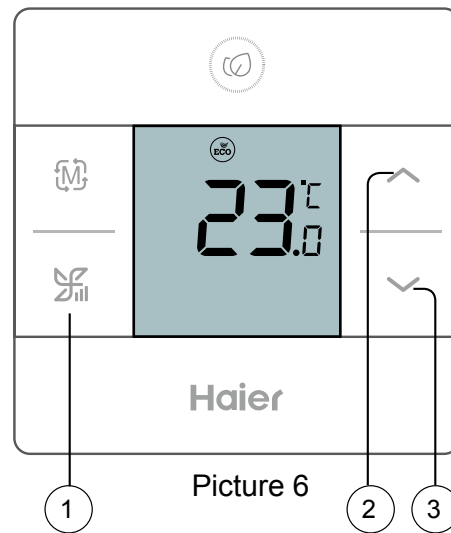
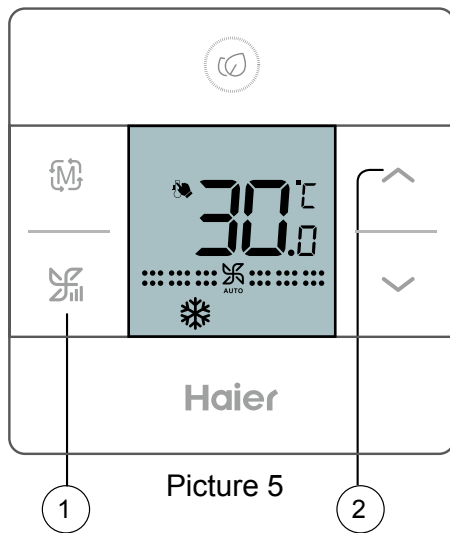
2. Heating mode ECO parameter setting: switch on the controller (see below picture 7),under the condition: heating mode ,setting temperature 16°C, press ① fan speed button and ③ temperature reduce button together 5 seconds continuously, then enter the setting interface(see below picture 8),the ECO value display at the temperature area, modify the ECO value by the up button ② and down button ③ ,then confirm the setting by the fan speed button ① . After modify the value ,but have not confirm the setting by the fan speed button within 10 seconds, or during modify the value, if press the controller mode or switch on/off button, controller will automatic exit the setting and will not save the modify value. The default ECO parameter for heating mode is 26°C, so ,the heating mode setting temperature range is 16-26°C. heating mode ECO parameter setting value is 16°C-30°C and valid in heating mode.

3.The ECO function valid when controller display the  icon.

When the ECO function valid:

If the controller setting temperature exceed the ECO setting temperaturerange. The controller eco icon  will flash for warning

If the controller setting temperature received from the remote controller exceed the ECO setting temperature range. The buzzer will sound three times and the controller eco icon  will flash for warning.



### Fahrenheit/Celsius changement

1. If the current temperature unit is Celsius, if need change the temperature unit to Fahrenheit; For any operation mode, change the setting temperature to 30 Celsius (if have ECO function, the setting temperature is the maximum temperature of ECO temperature range), press the up button 15 seconds continuously, temperature unit will change to Fahrenheit.

2. If the current temperature unit is Fahrenheit, if need change the temperature unit to Celsius; For any operation mode, change the setting temperature to 60 Fahrenheit (if have ECO function, the setting temperature is the minimum temperature of ECO temperature range), press the down button 15 seconds continuously, temperature unit will change to Celsius.

### Remote wireless control

Remote wireless controller can control the wired controller; if wired controller received the remote wireless controller signal, wired controller buzzer have sound feedback. If not, buzzer will have no sound feedback.

### Auto restart and mode memory

1. Switch off state, light up the backlight, press the up button 15 seconds continuously, buzzer sound once and enter advance setting 02.

2.Auto restart memory parameter: switch on/off state, mode, fan speed, setting temperature.

3. ECO, temperature compensation, error will have memory whatever have auto restart or not

After have the auto restart function, if the controller EEPROM broken, controller will operation without the auto restart function.

Mode, fan speed, setting temperature have relation mode memory , change the mode or switch on/off ; Mode, fan speed, setting temperature have relation mode memory, will change the parameter corresponding.

### Trouble shooting

1.If the controller temperature sensor short circuit or open circuit for 2 minutes continuously, will display E1 error code at the temperature display area. Temperature sensor error can resuming.

2.EEPROM error, will have E2 error code.

3.If have temperature sensor error, temperature display area will static display E1; But EEPROM error will not display. EEPROM error can inquire from history list. When have Temperature sensor error, fan stop, valve close; after the error resume, system normally control

4. Controller display range from 0°C to 50°C,if display 50°C, it mean the sensor short circuit, if display 0°C, it mean open circuit, if display 50°C or 0°C 2 minutes continuously, controller will display E1 error code.

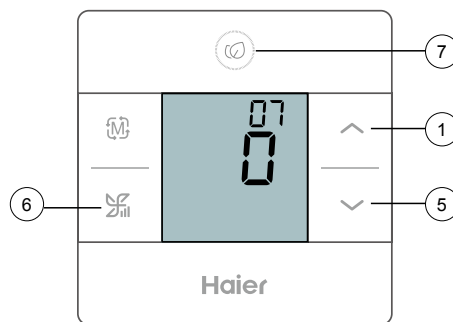
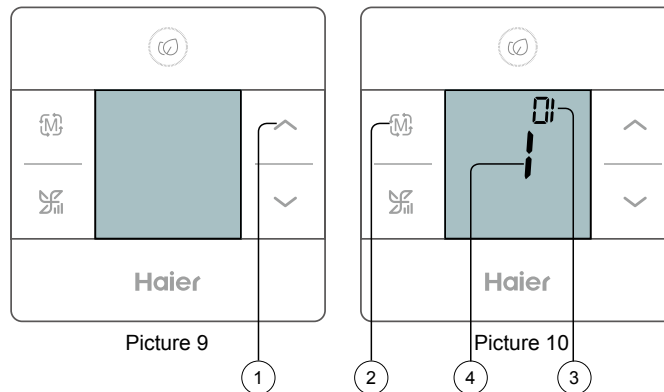
### Mode selection

Enter the mode selection by the advanced setting

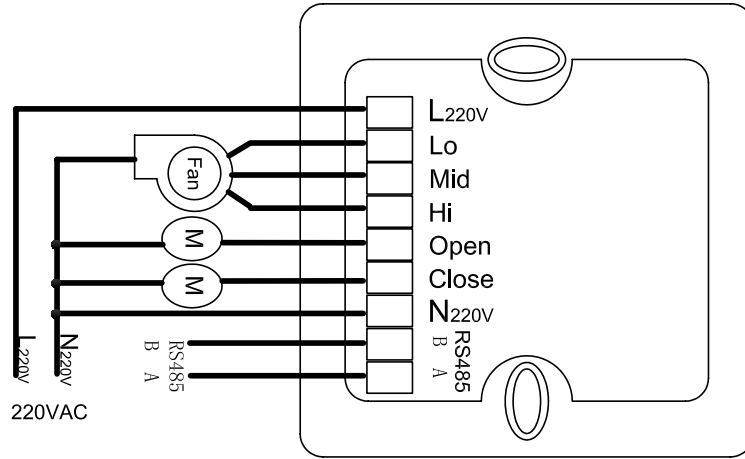
Switch off state, light up the backlight, press the up button ① 15 seconds continuously (below picture 9), buzzer sound once and enter the advanced setting (below picture 10),right top corner will display the word ③ ,press the mode button ② ,change the word to 07,the temperature display area ④ will display the setting value, press up button ① and down button ⑤ to change the value. The value is from 0 to 5 (below chart 11), press ⑥ fan speed button to confirm.

If have not any operation more than 10 seconds or press the ⑦ switch on/off will exit the advance setting.

07	Mode selection	0-cooling mode-heating mode -fan mode (default) 1-cooling mode 2-heating mode 3-cooling mode-heating mode 4-cooling mode-fan mode 5-heating mode-fan mode
----	----------------	--



• Wiring



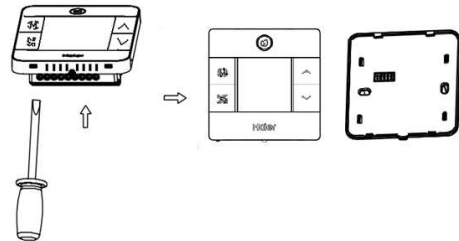
Note:

1. Install it by the professional technician.
2. Must power off before wiring.
3. Wiring according to the wiring diagram, check the fan motor and the control valve wiring .

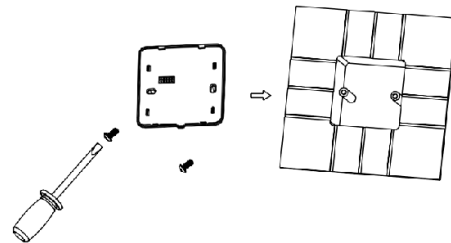
• Installation process

**Installation process**

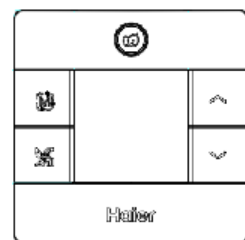
1. Separate the front and the back part of the controller.



2. Wiring and fix the back part of controller to the 86 box.



3. Fix the front part of controller.



- External of Modbus protocol

Object type: 9600, 8, n, 2

130B modbus rtu point list:

01(Query)/5( Control) /15(Control)

Word	Name	Range	State Text
0	ON/OFF	0-1	0:OFF,1-ON

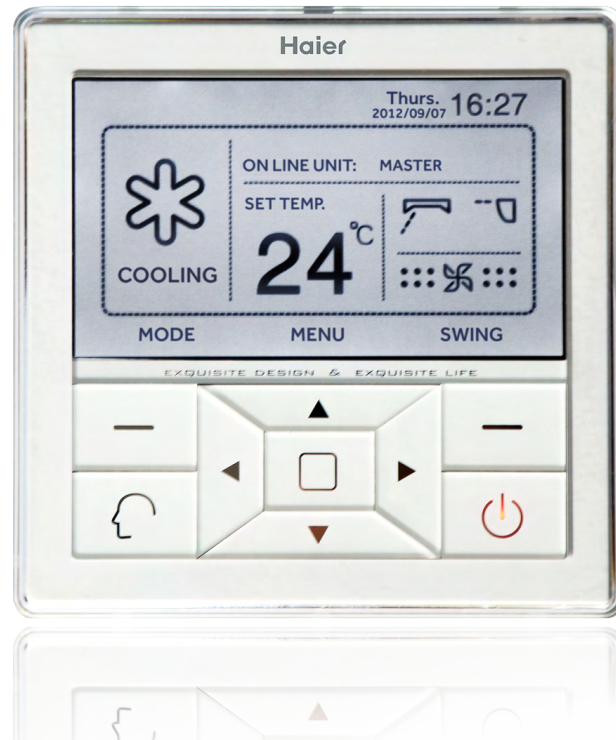
03(Query)/6( Control) /16(Control)

Word	Name	Range	State Text
0	Set temperature	16-30	16-30
1	Mode	1--5	1-Cooling 2-Heating 3-Dehumidify(reserved) 4-Fan5-Auto(reserved) (Remark: For more detail, refer "Mode combination setting")
2	Fan	1-4	1-Low 2-Mid 3-Hi 4-Auto
3	Control Mode	1-4	1-Nothing 2-LIFO(Last in first out) 3-Central 4-Lock

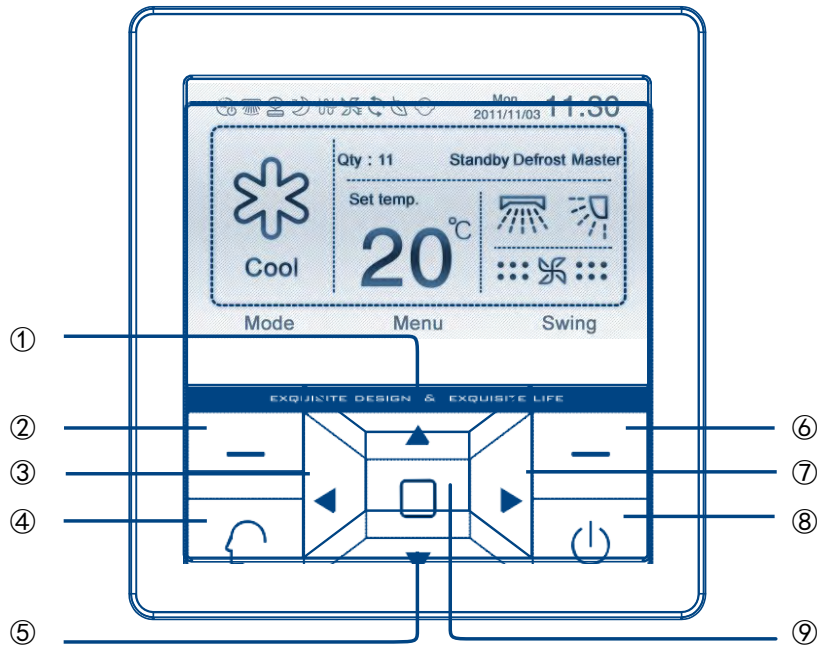
04(Query)

Word	Name	Range	State Text
0	Ambient temperature	0-50	0-50
1	Error code	0-256	0 stands for no trouble

## 3.6 YR-E16



## Key instructions for the wired controller



### ① Up direction key:

It provides temperature rise function in the mode switching interface; if this key is pressed in the menu interface, the cursor moves upward; It raises the numerical value when adjusting value.

### ② Left function key:

According to the function prompt above the key, it provides mode switching function in the mode interface and return function in the menu interface.

### ③ Left direction key:

It provides air speed switching function (when the right key is the swing key); it provides cursor leftward movement function in other interfaces.

### ④ Intelligent key:

In the main menu interface, press this key to initiate the intelligent work mode. (excluding single cold mode and single heat mode and when there is no intelligent mode for indoor DIP switch setting.)

### ⑤ Down direction key:

It provides temperature drop function in the mode switching interface; if this key is pressed in the menu interface, the cursor moves downward; It reduces the numerical value when adjusting value.

### ⑥ Right function key:

According to the function prompt above the key, it provides swing on/off function or air speed (when both the left-right and up-down options are not selected in the air direction setting interface) switching in the mode interface; it provides the confirmation function in the menu interface and it provides the "Next step" function in the interface of "Service Set - Password-Original password".

### ⑦ Right direction key:

It provides air speed switching function (when the right key is the swing key); it provides cursor rightward movement function in other interfaces.

### ⑧ Startup & Shutdown key:

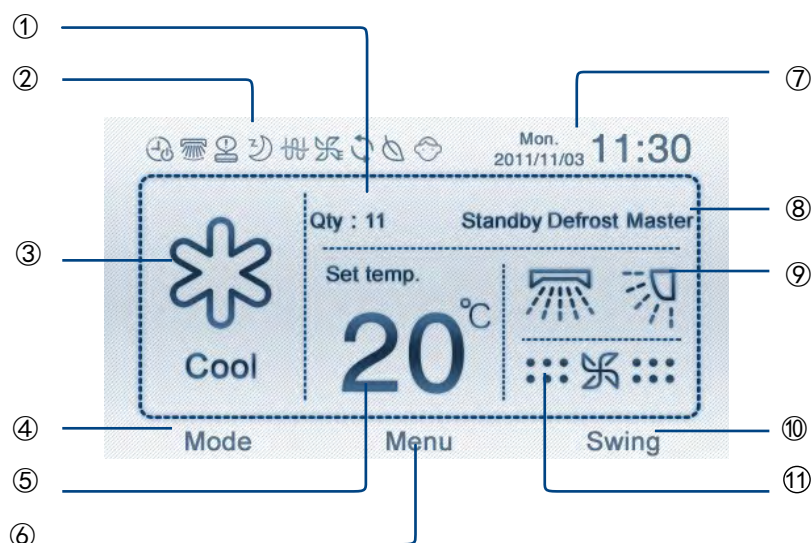
It provides startup and shutdown function. When in shutdown state, press this key to start it up; press the key again to shut it down.

### ⑨ Menu/main interface/input key:

It provides menu function in the mode interface; in the menu interface, it will enter the main interface; in the password interface, it functions as the characters input key referring to the prompting character above the key.



## Main interface display



### ① Online units display area:

it displays the number of the units controlled by one wired controller

### ② Special function/fault icon display area:

such as weekly timer, Swing, sleep, children lock, force, air exchange and energy conservation; each icon corresponds to a function; if a fault appears, the fault icon is displayed.

### ③ Mode display area:

intelligent, heating, cooling, dehumidification and fan modes (the single cold mode has only cooling, dehumidification and fan modes; the single heat mode has only heating and fan modes; except when DIP switch of indoor unit has mode limit. )

### ④ Left function key function prompt area

### ⑤ Set temperature display area:

The range of adjustment is 16°C to 30°C (except when in the setting of energy conservation function).

### ⑥ "Menu/main interface/input" key function prompt area:

if any function is prompted here, press the menu/main interface/input to execute the prompted function

### ⑦ Date and time display area

### ⑧ Status indication area:

Indication of the master/slave unit of the wired controller, filter screen cleaning prompt/defrosting status indication/ forced defrosting issuance prompt, operation/standby status indication.

### ⑨ Swing:



















Dynamic display during setting of swing (single swing, or both swings or no swing, depending on the set air direction)

### ⑩ Right function key function prompt area

### ⑪ Air speed display area:

Automatic, weak air, moderate air, strong air; the fan mode has no automatic air

## Explanation of the icons of the wired controller













	Intelligent mode		Time setting
	Heating mode		Weekly timer
	Cooling mode		Sleep
	Dehumidification mode		Left-right swing
	Fan only mode		Up-down swing
	Energy conservation function		Swing function
	Fault		Air change
	Force		Children lock
	Mute		Health

## Display and adjustment of air speed

1. Default air speed upon initial energization

Mode	Cooling	Heating	Intelligent	Dehumidification	Fan
Air speed	Strong air	Weak air	Automatic air	Automatic air	Weak air

2. Press the "left-right" key to set air speed

Strong air:    Moderate air:    Weak air:   Automatic:  →  →  →  i.e. automatic cyclic display in weak→moderate→strong→weak air

3. In the fan mode, automatic air is unavailable. The other displays are the same with the above.

4. For some models, the right function key is the "air speed" key (i.e. the bottom right corner of the interface displays "speed"), so air speed is adjusted using the right function key, instead of left-right direction key.

## Weekly timer setting:

1. Proceed with main interface→Menu→Weekly timer→"Enter" to enter, which is shown in Figure 1; When the cursors is at "⊕", press "Enter" key to add a group of timing information; non-initial setting may be displayed as shown in Figure 2; maximally 7 groups of timing information can be set.

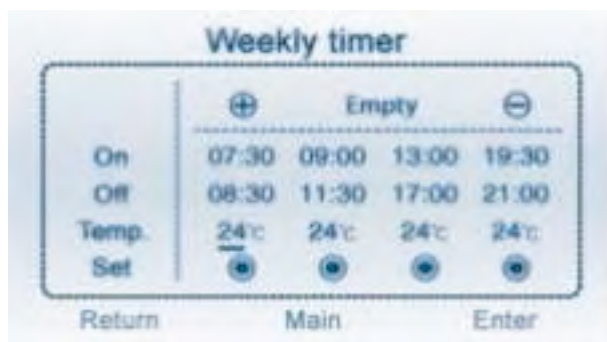


Figure 1

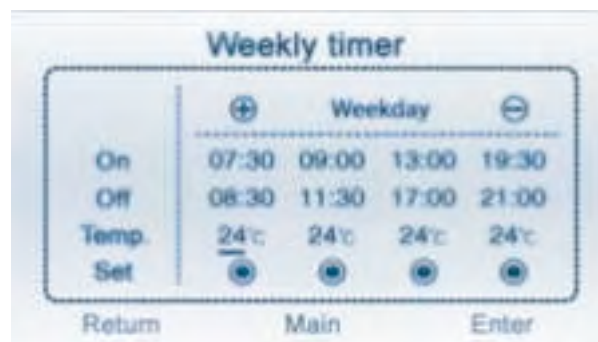


Figure 2

## 2. Setting of weekly timer

Press the "Enter" key, a window as shown in Figure 3 will pop out. The location where the cursor stays is flickering,  indicates unselected and  indicates selected ; press the "Input" key to select it so that it changes to  or  ; weekly timer can be set as you wish. After the selection has been done, press the "Enter" key to exit the setting of weekly timer; return to the main interface for weekly timer. If "from Sunday to Saturday" are selected, after pressing "Enter", the timing item should be "Daily"; If "from Monday to Friday" are selected, after pressing "Enter", the timing item should be "Weekday", as shown in Figure 2.

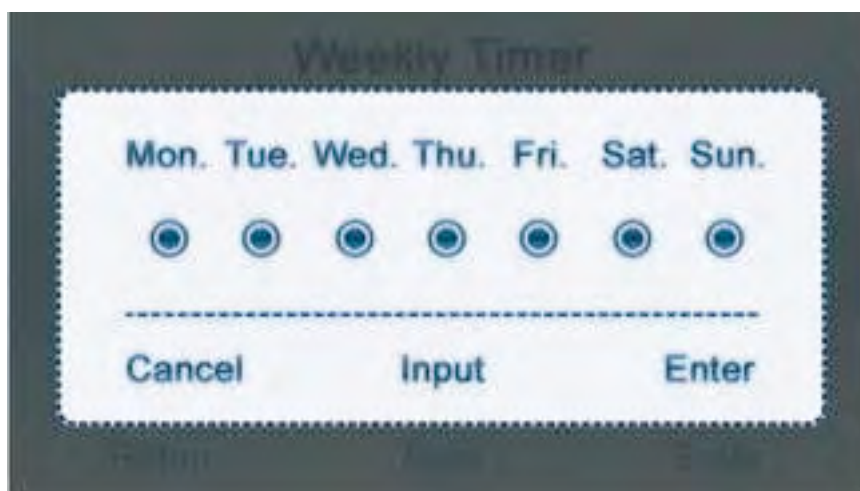


Figure 3

## 3. Time setting of timing switch

A. After the timing items for week have been set, each group of set timing information displays 5 seconds cyclically; when it is displayed in the timing information group, press the "Downward" key to initiate the time setting of the timing switch of the current group;

B. The cursor is flickering where it stays; when the right function key, as an "Enter" key, is pressed, the cursor becomes static, which indicates that it is in the adjustment state; press the upward-downward key to adjust the time and temperature. After adjustment of time and temperature, move the cursor leftward and rightward to confirm the time and temperature.

C. For adjustment of time, keep the "upward" key or "downward" pressed down for 5s, the clock change will accelerate, with acceleration frequency of 10times/s.

D. During flicker of the cursor, move upward, downward, leftward or rightward to select the circle below; use the right function key, as an "Enter" key, to confirm or cancel the setting; ● represents setting valid and ○ represents setting invalid.

E. If ● is present in a timing item containing week, this means the corresponding timing information is valid.

#### 4. Deletion of timing information

If, in a "weekly timer" interface, the cursor is at "⊕" press the leftward/rightward key to select ⊖ ; then press "Enter" key to pop out the window as shown in Figure 4. Then press the left key or right key to delete or retain the timing information.

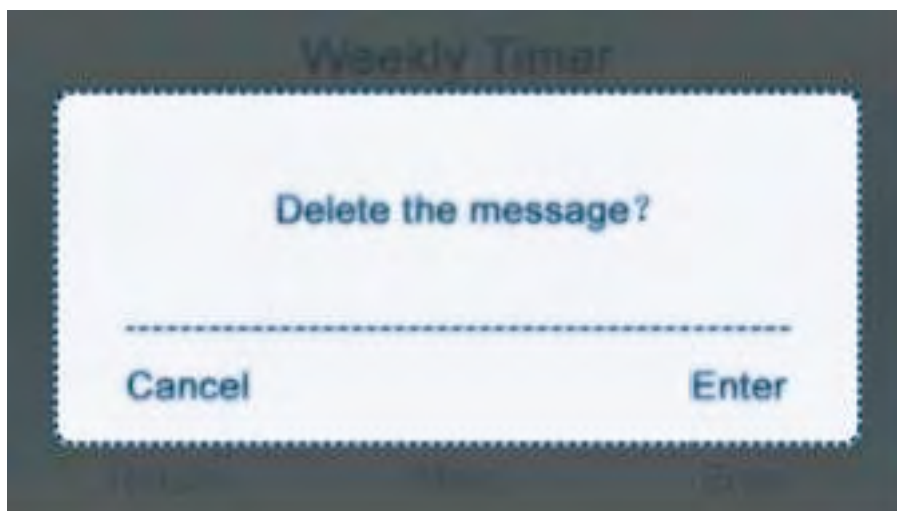


Figure 4

5. Timing switch on/off conflict prompt: if the timing has been set in such a way that timing on/off setting conflicts occur at the same time on the same day, those shown in Figure 5 will pop out.

Note: In the time setting state of week timing(cursor still), if no order input for 1 minute, screen saver will be activated and it will automatically return to main interface; In which state, non-conflicting orders are effective and otherwise no interface popping out; Latter input conflicting orders are ineffective with NONSET state displaying

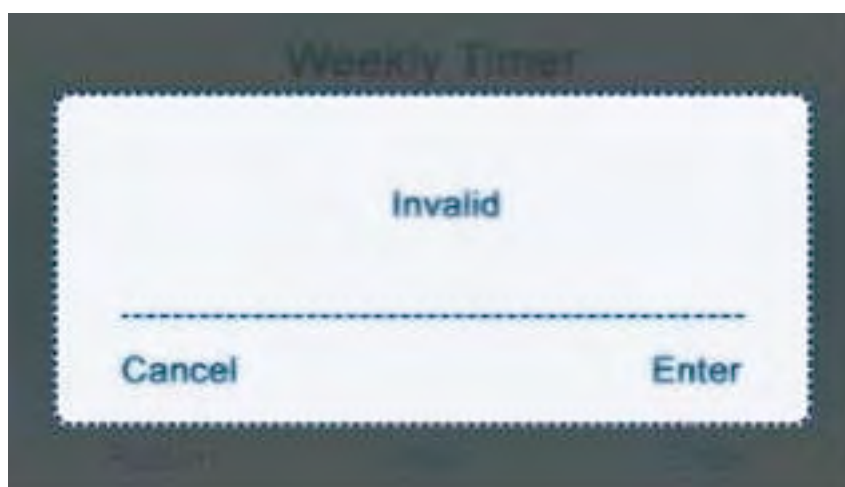


Figure 5

6. Prior to setting of weekly timer, please make time setting through main interface→ Menu→ Time interface.

7.The slave unit of the wired controller has no setting of weekly timer.

8.Weekly timer setting done, it needs to exit the weekly timer interface to execute the order.

## Current clock setting:

1. Proceed through main interface→Menu→Time→"Enter" key to enter, which is shown in Figure 6.



Figure 6

2. Default setting starts with the "Year" value, press the "rightward key" to select "Year"→"Month"→"Day"→"Hour"→"Minute"→"Week"; or press the "leftward key" to select "Week"→"Minute"→"Hour"→"Day"→"Month"→"Year".
3. When the time to be changed has been selected, press the "Upward key" or "Downward key" to adjust the time.
4. After all the times have been adjusted, press "Enter" key to complete the setting.

## Service setting:

1. Proceed through main interface→Menu→Other→enter password→press "Enter" key→Service Set→press "Enter" key to initiate the setting, which is shown in Figure 7.

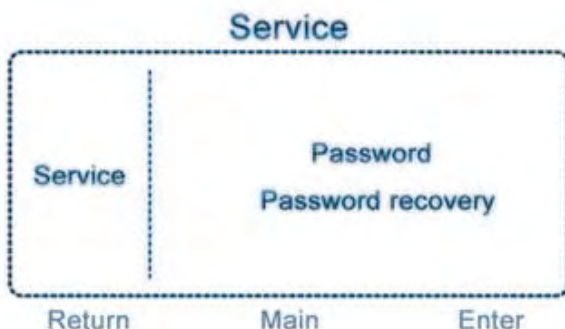


Figure 7

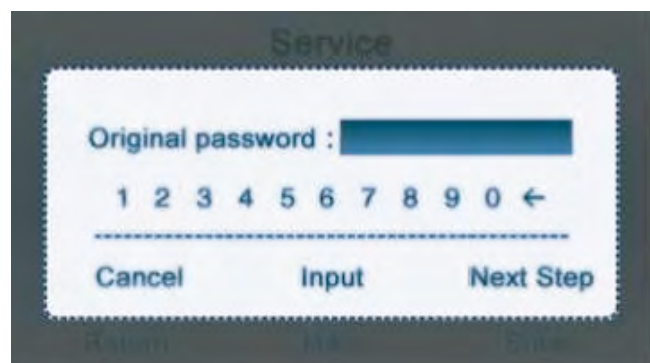


Figure 8



## 2. Password setting

A. Common users are provided with a four-digit password which is initially 1234; high-class users are provided with a six-digit password 841226 which can be operated by the technical personnel only.

B. Press the "upward" key or "downward" key to select "password" and press "Enter" key to initiate password setting, which is shown in Figure 8.

Password setting is intended for changing only the password of a common user.

C. Press the "leftward" key and "rightward" key to select in the line of numbers; press the "input" key to fix the selected numbers in the password box. When password entry is completed, press the right key to proceed with "next step". If the original password is input incorrectly, a window prompting "Wrong password" will pop out as shown in Figure 9. Press "Enter" or "Cancel" in this window to return to the figure 8.

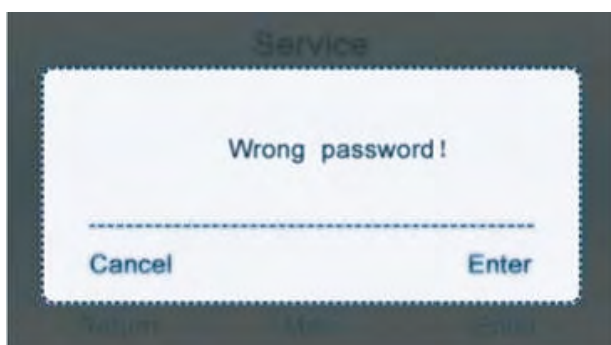


Figure 9

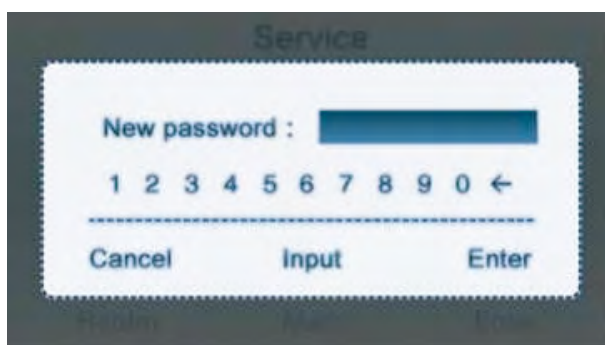


Figure 10

D. If the "original password" is entered successfully, a window will pop out as shown in Figure 10 prompting "New password"; enter the password in the same way as described above and then press "Enter" key again to confirm successful setting of new password or press "Cancel" key to cancel the password setting.

E. If the new password has been set successfully, a window prompting "New password set Successfully!" as shown in Figure 11 will appear; press "Enter" or "Cancel" to return to the previous menu.

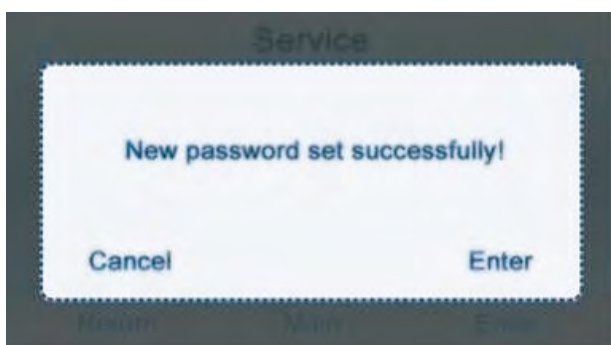


Figure 11

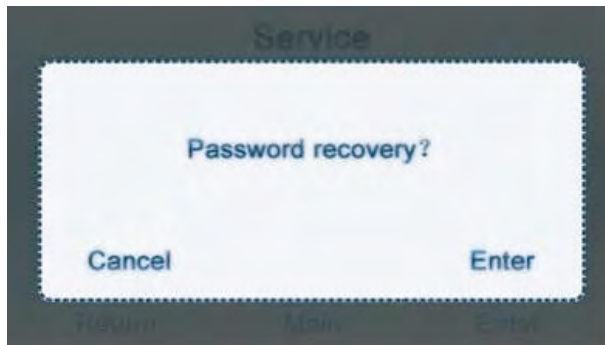


Figure 12

## 3. Restore the initial password

A. Select "Password recovery" as shown in Figure 7 and then press "Enter" key to enter the interface as shown in Figure 12; press the left key "Cancel" or the right key "Enter" to cancel this operation or confirm restoration of the initial password.

B. This operation here is used for restoring only the password of a common user.

## Fault code query:

Proceed through main interface→Menu→Other→enter password→press "Enter" key→Error code→enter 14. The password entry interface is shown in Figure 13 and the entry method is the same as password setting.

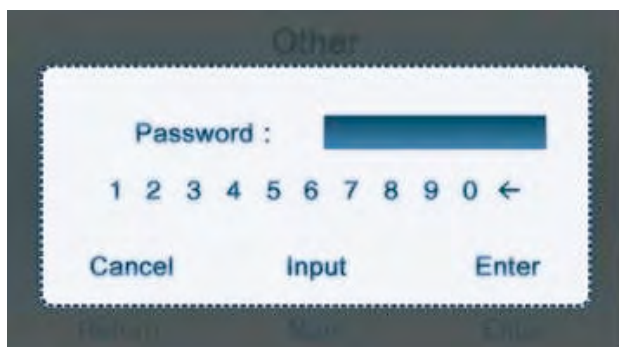


Figure 13

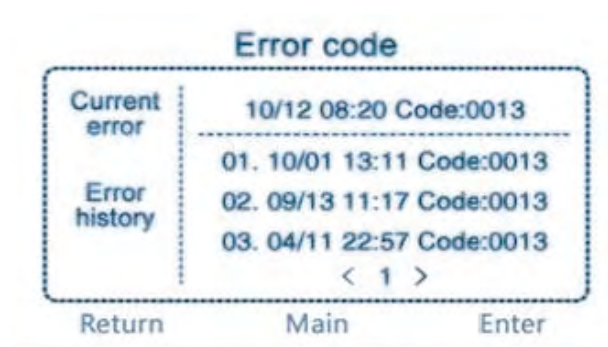


Figure 14

1. Use the "leftward" key and "rightward" key to check the fault codes inside the unit; where <1> can be 1 to 16, which is the address code within the wired controller group.
2. In the current interface, keep both the "left" key and "right" key pressed down for 5 seconds to clear the historic faults record.
3. A common user can view the current faults and historic faults; a high-class user can view 10 historic faults, using the "downward" key and "upward" key. If a common user presses the "downward" key, a window as shown in Figure 15; a high-class user can enter his/her password to view ten historic faults.

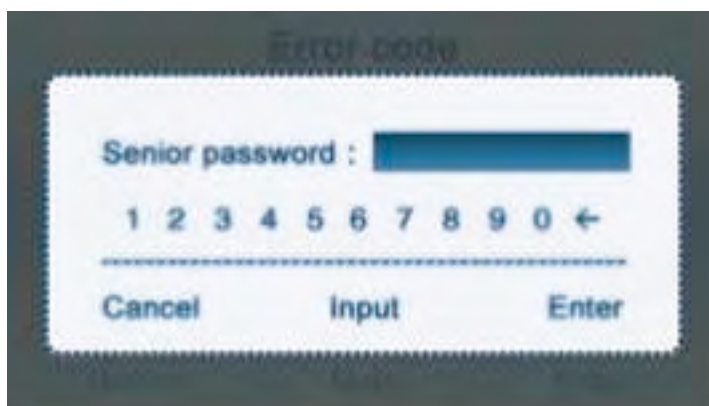


Figure 15

## Air direction setting:

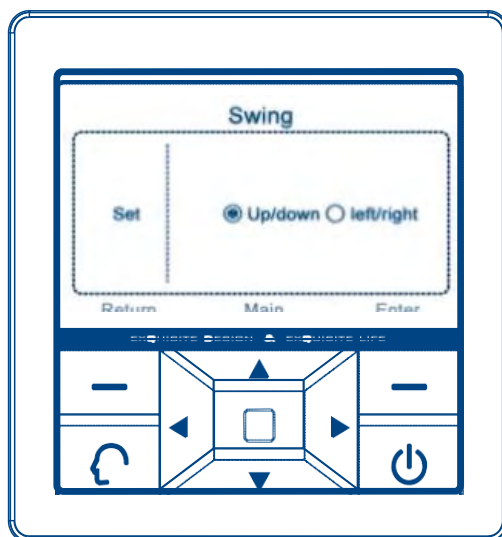


Figure 16

1. Proceed through main interface→Menu→Swing→press "Enter" key; the default air direction is up/down. If a left/right air deflector is being controlled, the "left/right" option can be selected.
2. If only the left/right direction is selected when setting the swing function, only the left/right air deflector will swing; if only the up/down direction is selected when setting the swing function, only the up/down air deflector will swing; if both the left/right direction and up/down direction are selected, both the left/right air deflector and up/down air deflector will swing (for different models, some units have only the left/right air deflector or up/down air deflector; the setting needs to be made consistent with the specific model).
3. ● Indicates "selected", ○ indicates "unselected"
4. If both the up/down direction and left/right direction are not selected, the bottom right corner of the main interface will display the air speed; Use the right key to switch the air speeds.

## Sleep setting:

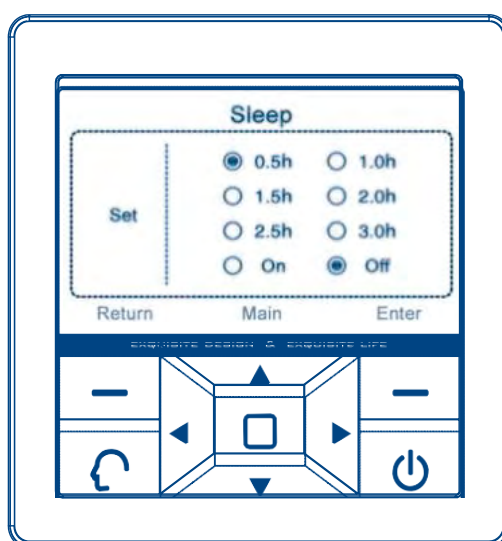


Figure 17



1. Proceed through main interface→Menu→Sleep→press "Enter" key to initiate this mode; The default state is shutdown.
2. Use the up ,down, left and right keys to adjust the cursor; The location where the cursor stays has the circle flickering; press the "Enter" key to select the time and switch between on/off.
3. The selected time 0.5, 1, 1.5, 2, 2.5 and 3 mean that the wired controller will shut down in 0.5/1/1.5/2/2.5/3 hours from time setting.
4. If the sleep mode has been set, the main interface will have the sleep icon.
5. Prior to setting of sleep mode, please make the time setting, so that the time can be consistent with the current actual time.
6. The slave unit of the wired controller has no setting of sleep setting.
7. If wired controller is powered off, sleeping function is "OFF"; Reset the function if needed.

## Unit number setting:

(This function is intended for debugging by technical personnel. The wired controller No. with no permission of address setting by indoor DIP switch setting displays grey, with access to checking and no access to changing the communication No.)



Figure 18

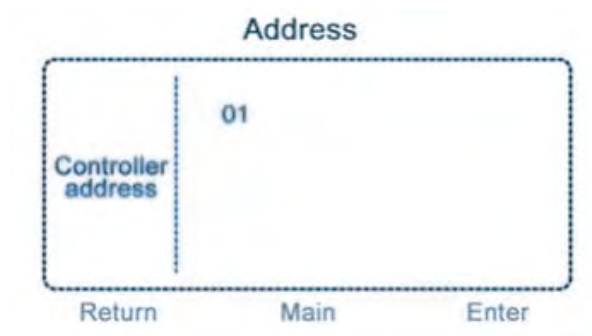


Figure 19

1. Proceed through main interface→Menu→Other →enter the password of the technical personnel→press "Enter" key→Addressing→press "Enter" to enter the interface as shown in Figure 18.
2. Wired controller number, as shown in Figure 18, is set by DIP switch of indoor unit. If one wired controller controls one unit, there is only 01; it displays the unit numbers corresponding to the indoor units in operation.
3. When in the interface as shown in Figure 18, if there are more than one wired controller numbers, use the "upward", "downward", "leftward" and "rightward" keys to select a unit number and press "Enter" key; Then the POP window as shown in Figure 19 will appear.
4. When the window in Figure 19 has popped out, the communication unit number of this controller can be set (communication addresses between the outdoor unit and indoor unit) 1-64; use the leftward and rightward keys to adjust the unit digits and tens digits and use the upward and downward keys to adjust the values on the corresponding digits; then press "Enter" or "Cancel" to return to the interface as shown in Figure 18.
5. The controller address equals the corresponding value of indoor unit's group address dial code plus 1.

## Mode lock setting:

1. Proceed through main interface→Menu→Other →enter password→Mode→press "Enter" key. The default state is "Normal".
2. In single cold mode, only cooling, dehumidification and fan modes can be executed and the intelligent key is ineffective. In single heating mode, only heat and fan modes can be executed and the intelligent key is ineffective. In normal mode, the heating, cooling, dehumidification, fan and intelligent modes can be executed.
3. The location where the cursor stays has the circle flickering; use the leftward and rightward keys to adjust the cursor; press the cursor where it stays to select  ; indicates "selected" and  indicates "unselected".

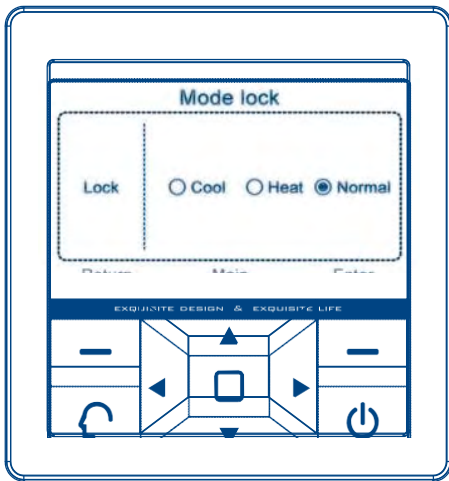


Figure 20

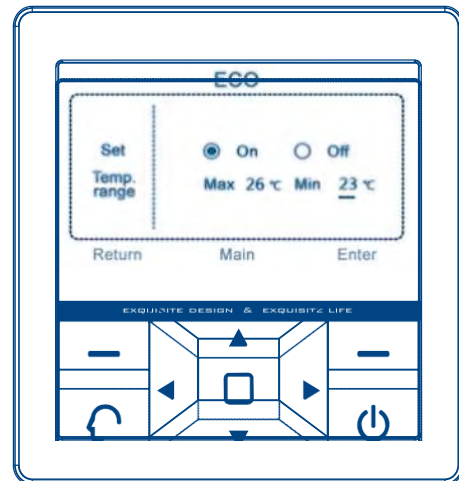



Figure 21

## ECO setting:

1. Proceed through main interface→Menu→ECO→press the "Enter" key to initiate. The default state is shutdown.
2. Upper temperature limit---the maximum temperature value that can be set for heating mode; Lower temperature limit ---the minimum temperature value that can be set for cooling/dehumidification mode.
3. Use the leftward and rightward keys to adjust the cursor;the circle flickers where the cursor stays; indicates "unselected"; press "Enter" and it will change to which indicates "selected".
4. When "off" is selected, temperature setting is not constrained by energy conservation setting; The range of temperature adjustment is 16°C to 30°C; if "on" is selected, temperature setting is constrained with energy conservation setting.
5. When it has been adjusted to the values corresponding to "upper limit" or "lower limit" using leftward and rightward keys, an underline will appear below the temperature value and now the "upward" and "downward" keys can be used to adjust the temperature; the maximum and minimum temperature values are 16°C and 30°C.
6. If energy conservation is on, the main interface will display the icon  for energy conservation.

## Additional functions:

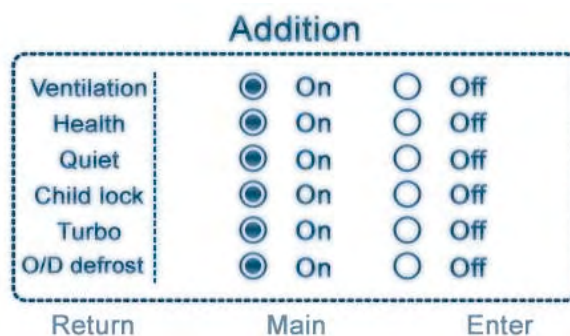


Figure 22

1. Proceed through main interface→Menu→Addition→press "Enter" key to initiate. The default state is shutdown.
  2. Ventilation: Some models have the air ventilation and some models do not. For those models that do not have this function, the ventilation setting will not be usable.
  3. Health: Some models have the health function and some models do not. For those models that do not have this function, the health setting will not be usable.
  4. Quiet: Some models have the quiet function and some models do not. For those models that do not have this function, the quiet setting will not be usable.
  5. Turbo: Some models have the turbo function and some models do not. For those models that do not have this function, the turbo setting will not be usable.
  6. When the children lock is on, it automatically returns to the main interface and all the keys are unusable. The main interface displays the icon for children lock; keep both the leftward and rightward keys pressed down for 5 seconds and the children lock icon will disappear, and now the children lock is disengaged and all the keys are usable.
  7. O/D defrost is effective in the heating mode; The O/D defrost command is sent to indoor unit.
- Note: for some models, the turbo and quiet functions are reserved functions and are in grey color.

## Special parameters

This function is a reserved function and is temporarily in color grey

### Filter screen cleaning

1. If the state indication area of the main interface displays "filter", filter cleaning shall be performed.
2. When "filter" is being displayed, keep both the upward and downward keys pressed down for 5 seconds to cancel the "filter" icon.

### Temperature compensation

(This function is intended for debugging by technical personnel and can only be entered by high-class users)

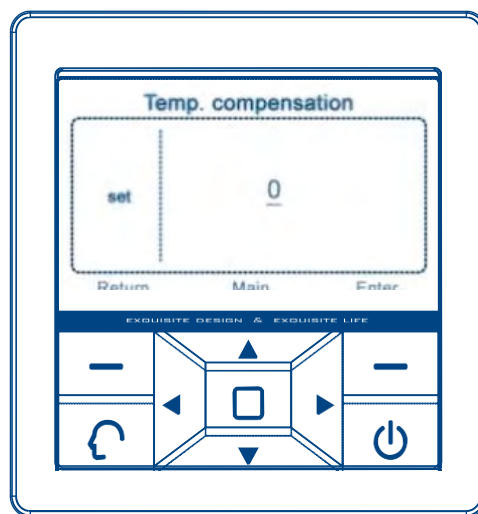


Figure 23

1. Proceed through main interface→Menu→Other→enter the high-class user password→Temp. Compensation→press "Enter" to initiate.
2. When in this interface, use the upward and downward keys to set the temperature value; the range of Celsius degrees is  $-4^{\circ}\text{C}$  to  $4^{\circ}\text{C}$ ; the default value is 0; The range of Fahrenheit degrees is  $-7$  to  $+7$ . Pressing "Enter", value change is done; If pressing "Return", original value is retained.

## Special set

This function is a reserved function and is temporarily in color grey

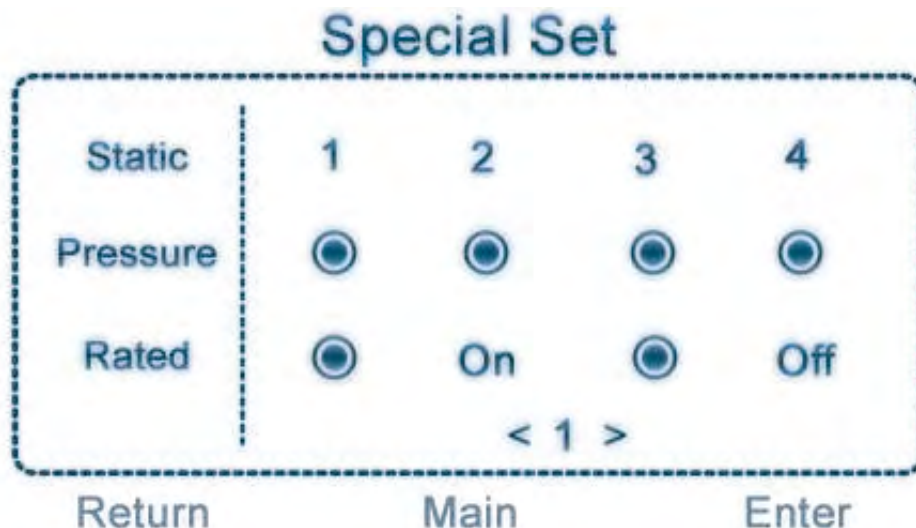


Figure 24

1. Special set is only effective to some types, with order ineffective if no such function equipped in the corresponding indoor units.
2. When powered on, the default static pressure grade is 1 and no rated value displayed; when communication stabilized (about 3 minutes later), static pressure and rated state can be checked.
3. Press up/down key to switch among Static pressure, rated value, wired controller group No.; press left/right key to move the cursor in every line and then press OK key to confirm the setting.
4. The circle flashes where the cursor locates when choosing static pressure and rated value; if the cursor moves to wired controller group No. location, the No. will be underlined and the range of No. is 1-16.

## Detailed information

(The common user password is required for access)

1. Proceed through main interface→Menu→other→enter the password→Details→press "Enter" to initiate.
2. 063 is the address of the wired controller inside the group; if one unit is controlled by one wired controller, the default address is 01; the range of this value is 01 to 16; the Indoor address is the communication address of both indoor unit and outdoor unit, ranging from 1 to 64.
3. The wired controller address equals the corresponding value of indoor unit's group address dial code plus 1.

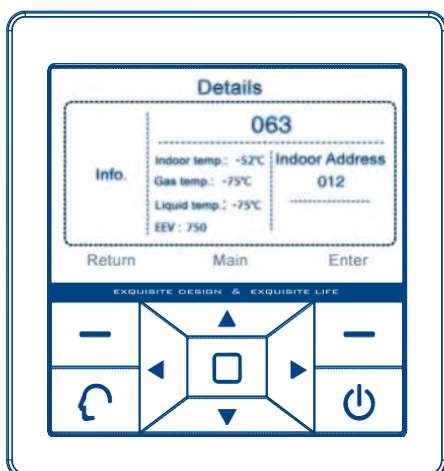


Figure 25

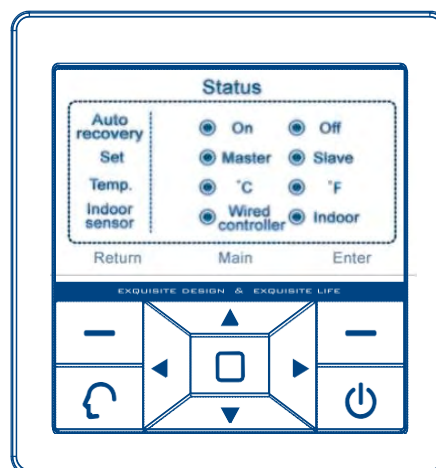


Figure 26

## State setting

(This function is intended for debugging by technical personnel and can be entered by high-class users only)

1. Proceed through main interface→Menu→Other→enter the high-class user password→Status set→press "Enter" to initiate.
2. Use the upward, downward, leftward and rightward keys to adjust the cursor; the location where the cursor stays has the circle flickering; press "Enter" key to change it to ●, and the setting is completed. ● indicates "selected" and ○ indicates "unselected".
3. Auto recovery: if this function is on, the state before power failure will be in the memory; after restoration of power failure, the unit will continue operating in the state as before the power failure. If this function is off, the state will not be memorized; if the unit is energized after power failure, it is in shutdown state; after startup, the default mode is in automatic mode as automatic air 24°C. If the auto recovery is set to be on and the sleep function is also set, in case of accidental power failure, the unit is in shutdown state when the power supply is resumed.
4. Master/slave setting: This setting is used for master/slave control of the wired controller and the master controller and slave controller are set separately.
5. Unit of temperature: Temperature is set in the units of Celsius degree and Fahrenheit degree.
6. Indoor sensor: Set the temperature source collection for ambient temperature sensor.

Differences between the function of the master wired controller and slave wired controller:





Comparison item	Master wired controller	Slave wired controller
Function	All functions	1. Air direction setting, time setting, mode lock, indoor sensor, auto recovery and ECO shall be consistent with the master wired controller. 2. Weekly timer, sleep setting, addressing, special set and temp. compensation are in grey color and are not operable.

### Screen saver:

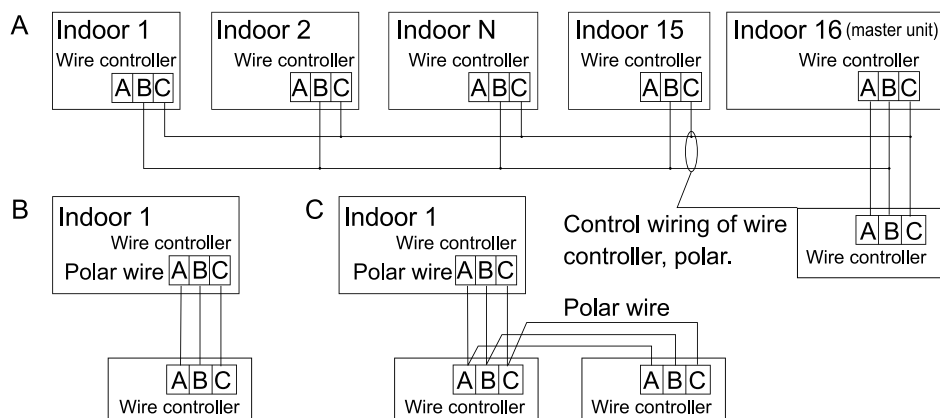
If there is no operation for one continuous minute, the luminance of the wired controller will be reduced to protect the screen and save energy. Press any key to terminate the function of screen saver and recover the pre-existing luminance.

### The handling of Centralization/Lock mode:

If central controller is connected in the AC system,

1. If there displays the icon  of in the main interface, the centralization mode is activated in the central controller in which only startup/shutdown keys can be operated and other keys are inoperable. If there is no operation for one continuous minute, the screen saver function will be initiated with the luminance of the wired controller reduced. Press any key to recover the preexisting luminance.
2. If there displays the icon  of in the main interface, the lock mode is set in the central controller with no keys operable. If there is no operation for one continuous minute, the screen saver function will be initiated with the luminance of the wired controller reduced. Press any key to recover the preexisting luminance.
3. If  or , weekly timer and sleep setting is invalid.

## Wiring connections of wire controller



There are three methods to connection wire controller and the indoor units:

A. One wired controller can control max. up to 16 sets of indoor units, and 3 pieces of polar wire must connect the wire controller and the master unit (the indoor unit connected with wire controller directly), the others connect with the master unit through 2 pieces of polar wire.

B. One wire controller controls one indoor unit, and the indoor unit connects with the wire controller through 3 pieces of polar wire.

C. Two wired controllers control one indoor unit. The wire controller connected with indoor unit is called master one, the other is called slave one. Master wire controller and indoor unit; master and slave wire controllers are all connected through 3 pieces of polar wire.

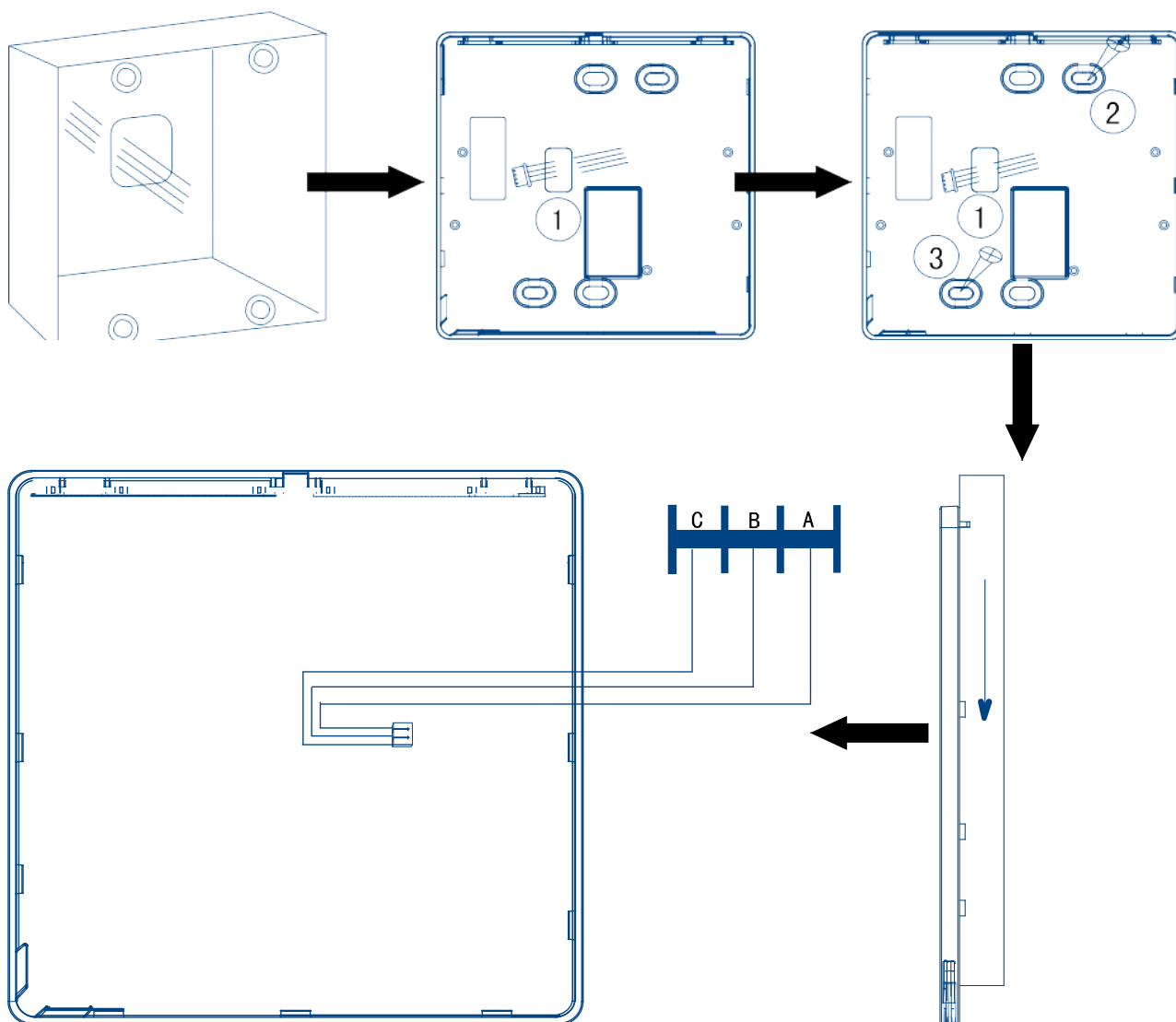
Note: For some slim duct type and middle ESP duct type (The PCB spare part number of which is 0151800175 or 0151800173), there will be a different wiring method, please refer to the service manual to get the wiring details.

## Communication wiring:

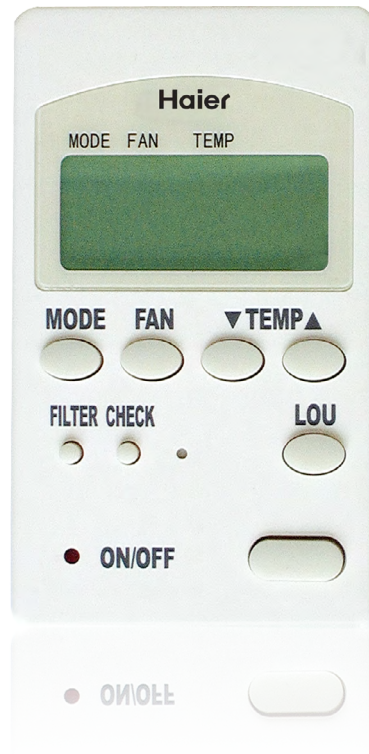
Communication wiring length (m/ft)	Dimensions of wiring
≤ 250m	0.75mm <sup>2</sup> x3-core shielded wire

\*One side of the shielded sheet of communication wire must be earthed.

1. Pass the communication cable through the hole of the concealed box.
2. Pass the cable through the back cover of the wired controller at the place No.1.
3. Mounted the back cover on the concealed box by screws.
4. plug the terminals of the communication cables on the corresponding connectors, and slide the front cover of the wirde controller from up to down,then fixed.
5. White wire, connected to indoor A, Yellow wire,connected to indoor B, Red wire,connected to indoor C.



## 3.7 YR-F02





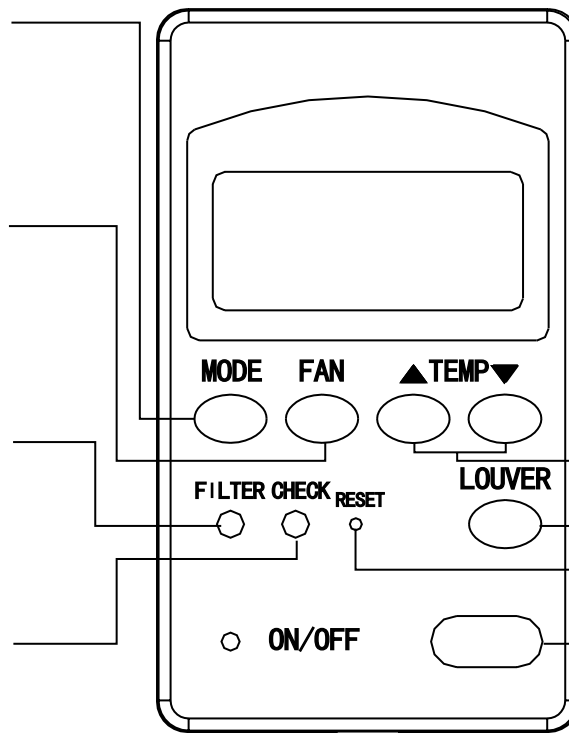
## Appearance

MODE button:  
Used for select indoor operation.

FAN button:  
Used for select indoor air flow.

FILTER button:  
Filter-cleaned button

CHECK button:  
Auto-diagnostic button



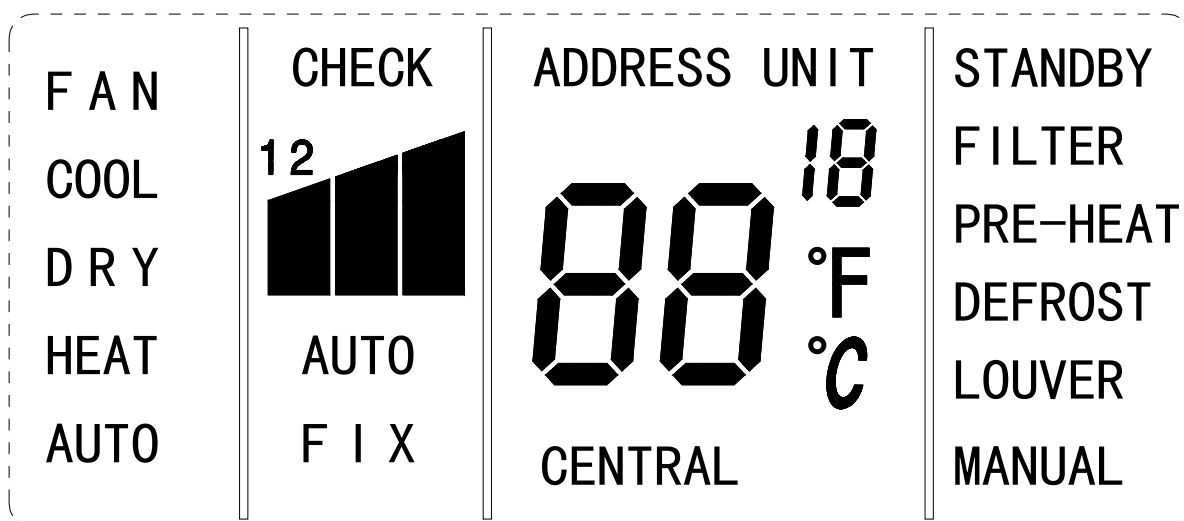
TEMP ▲ and ▼ button:  
Used for changing set temperature

LOUVER button: Used for setting indoor swing mode

RESET button:  
Reset correct mode button

ON/OFF button:  
Used for unit start and stop

## LCD display



### The 1st column:

FAN:air-throwing mode  
 COOL:Cooling operation mode  
 DRY:Dehumidification mode  
 HEAT:Heating operation mode  
 AUTO:Auto operation mode

### The 2nd column

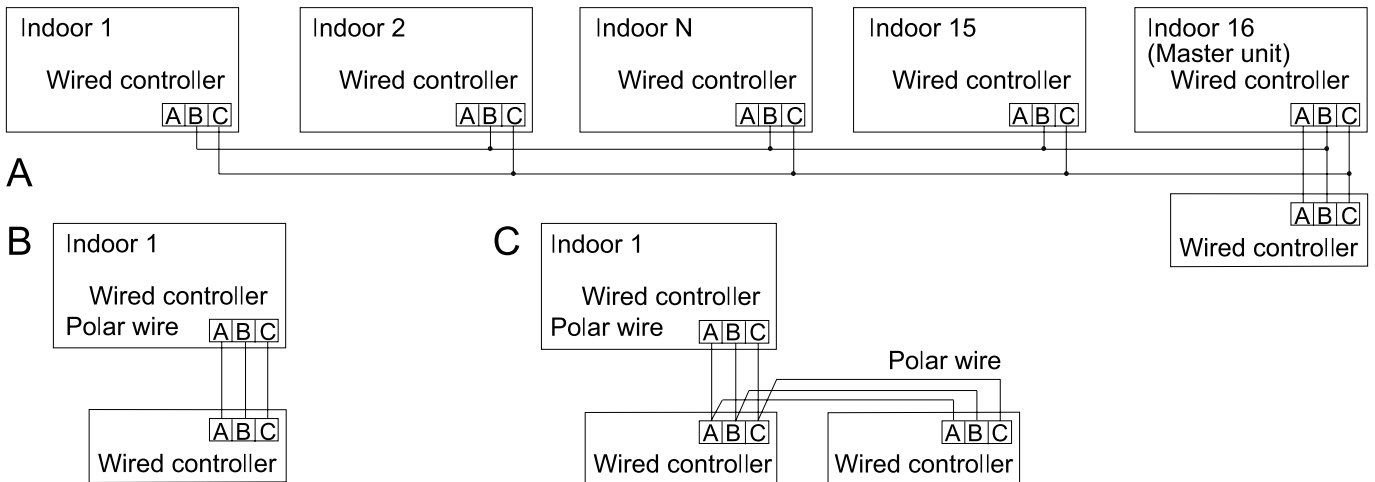
CHECK:Auto diagnostic,trouble shooting  
 1: display the current failure code at temp. area, and 1 in fan speed area will be light.  
 2: display the last failure code, at temp. area, and 2 in fan speed area will be light.  
 ■ :Low fan speed  
 ■■ :Medium fan speed  
 ■■■ :High fan speed  
 AUTO:Auto fan running  
 FIX: Fix fan speed, it will display only when fixed fan speed is requested to main indoor unit.  
 CENTRAL:Central control mode

### The 3rd column

STANDBY:Waiting mode  
 FILTER:Request of filter to be cleaned  
 Preheat:Preheating mode  
 DEFROST:Dfrosting mode  
 LOUVER/MANUAL:Swing mode

### Wiring connection

1. Take off the top cover of wired controller, PCB is set at the top cover. Be careful not to damage PCB.
2. Requirement for wire between indoor and wired controller and communication wire  
 Connect the terminals (A, B, C) at the bottom of wired controller with the terminals (A, B, C) on indoor PCB respectively.  
 Requirement for wire between indoor and wired controller.



There are three methods to connection wired controller and the indoor units:

- A:One wired controller can control max. up to 16 sets of indoor units. In this case, 3 pieces of polar wire must connect the wired controller and the master unit (the indoor unit connected with wired controller directly), the others connect with the master unit through 2 pieces of polar wire.
- B:One wired controller controls one indoor unit. The indoor unit connects with the wired controller through 3 pieces of polar wire.
- C:Two wired controllers control one indoor unit. The wired controller connected with indoor unit is called master one, the other is called slave one. Master wired controller and indoor unit; master and slave wired controller are all connected through 3 pieces of polar wire.

Note:The method A needs to set the PCB function switch. The method C needs to set the controller function switch.

**Notes:**

When wiring, keep the distance between communication wire and power cable more than 10mm.

No.	Mark	Color	Meaning
1	A	White or green	12V
2	B	Red	On earth
3	C	Yellow	Communication

Wire between indoor PCB and wired controller and the communication wire between indoor and outdoor should be shielded wire, and the wire should be earthed at single point. Otherwise the interference will affect the unit normal operation. Then confirm the terminals connected well and not touch the shielded wire.

**Communication wiring**

The communication wiring is 4 meter long; if the actual length is more than it, please distribute wiring according to below table:

Communication wiring length(m)	Dimensions of wiring
≤200	0.75mm <sup>2</sup> ×3-core shielded wire

**3. Install wired controller**

Drill 2 holes in the wall according to the position of the two screws on the back of wired controller, then fix the back cover of wired controller, install the front cover finally.

Note: Better install the wired controller on the flat wall. Don't fasten too much or wired controller will be damaged.

**4. Install the top cover of wired controller and make the wires built-in the walls.**

Note: Do not touch PCB with hand.

**Dip switch**

Item	Switch	State	Function
Changeover between master/slave wired controller	SW1	ON	Set as slave wired controller
		OFF	Set as master wired controller
Changeover between Celsius and Fahrenheit	SW2	ON	Display Fahrenheit
		OFF	Display Celsius

## JUMPER:

Auto restart	JP4	ON	Without auto restart
		OFF	With auto restart
Display indoor temp. or not	JP2	ON	Display indoor temp.
		OFF	Not display indoor temp.
26°C lock	JP3	ON	In cooling mode, not limit to set temperature
		OFF	In cooling mode, limit the set temp. below 26°C
Time-shorting	JP1	ON	With time-shorting
		OFF	Without

## Operation

Press ON/OFF button on wired controller.

Wired controller will display the state of last time (timer, swing etc will not display). And air conditioner will run, LED of wired controller will be light.

Select running mode

Press "mode", the mode will change as follow:

[AUTO] → [FAN] → [COOL] → [DRY] → [HEAT] → [AUTO]

TEMP button

Press TEMP +/- to set indoor temperature.

The preliminary set temperature at any mode is 24°C, but in FAN mode, no set temperature.

FAN button

Press "FAN" button to select fan speed, fan mode will change as follow(in DRY mode, fan speed is AUTO):

[AUTO] → [HIGH] → [MED] → [LOW] → [AUTO]

In FAN mode, there is no AUTO FAN speed.

If the main indoor unit needs to fix the fan speed, the fan speed can not be changed, and LCD will display FIX.

SWING button

Press SWING button, the flap will swing accordingly.

ON/OFF button

Press ON/OFF again, shut off the unit. LED of wired controller will be off.

## Cautions

Avoid switching on or off the unit frequently.

When you set one indoor at cooling mode (DRY) or heating mode, if the other indoors are in different modes, this indoor will be at standby state.

Press TEMP. button to increase or reduce the set temperature, then the unit maybe stop, which is not failure.

In cooling(or heating) mode, even indoor temp. is lower than (or higher than) the set temp., the unit still is running in cooling (or heating) mode, which is not abnormal.

In DRY mode, fan speed will change automatically due to indoor temperature, which can not be controlled by the

fan speed button.

When wired controller is electrified for the 1st time, LCD will display all information for 2 seconds, then LED and clock area will flash [88]→[8] →[88] for about 30 seconds. At this time, all buttons are invalid.

If this model is equipped with AUTO RESTART function, when re-electrified, the unit will display the original state before power is off.

Enter the mode of failure check

After entering the failure check mode, "18" in temp. area will display the unit number. "0" is the actual connected indoor number (decimal), meanwhile, "88" in temp. area will display the latest failure code (hex), and fan speed area will display "1"; press +/- button to check the former failure code, and fan speed area will display "2".

Every time you press "CHECK" button, unit number will increase 1 until it is 15; press again, it is "0", then recycle. That is cycling as 0~15~0.

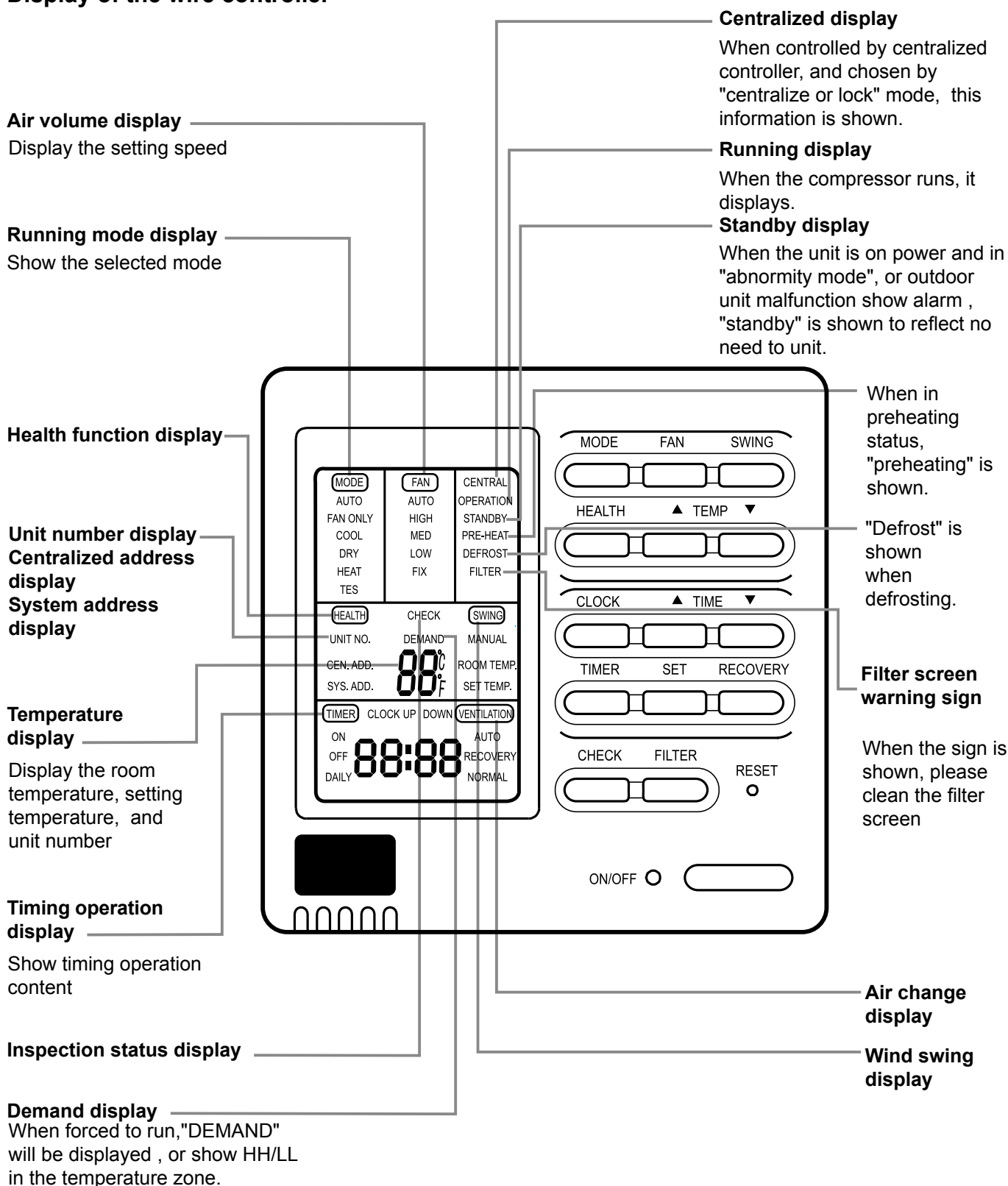
If within 5 seconds, no pressing "CHECK" button, it will quit the failure check mode automatically.

Cancel failure history: in normal state, press "CHECK" for 5 seconds continuously, you will cancel the failure history.

3.8 YR-E14



## Display of the wire controller



### Remarks

The models in the manual don't have health, filter reset and Air change function.

**Mode switch**

Choose running mode

**Health switch**

Used to control oxygen function and negative ion

**Fan speed switch**

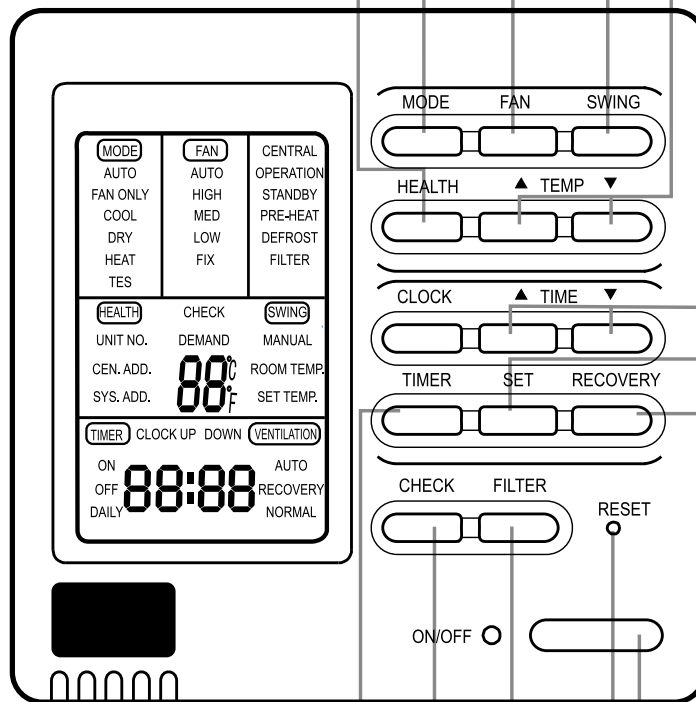
Change wind speed

**Swing switch**

Open and close air flap

**TEMP switch**

Used for changing set temperature



**Time switch**

It is used to regulate setting time.

**Clock, timing and address setting**

**Air change switch**

It is used to open and close air change function. The mode is as follows:  
No display-air change (automatic)- air change (RECOVERY)-air change (NORMAL)

**Timing switch**

It is used for choosing timing running

**Self-inspection switch**

It is used for inspection service

**Filter reset**

After cleaning air inlet and filter, press this switch. The unit begins to run

**ON/OFF switch**

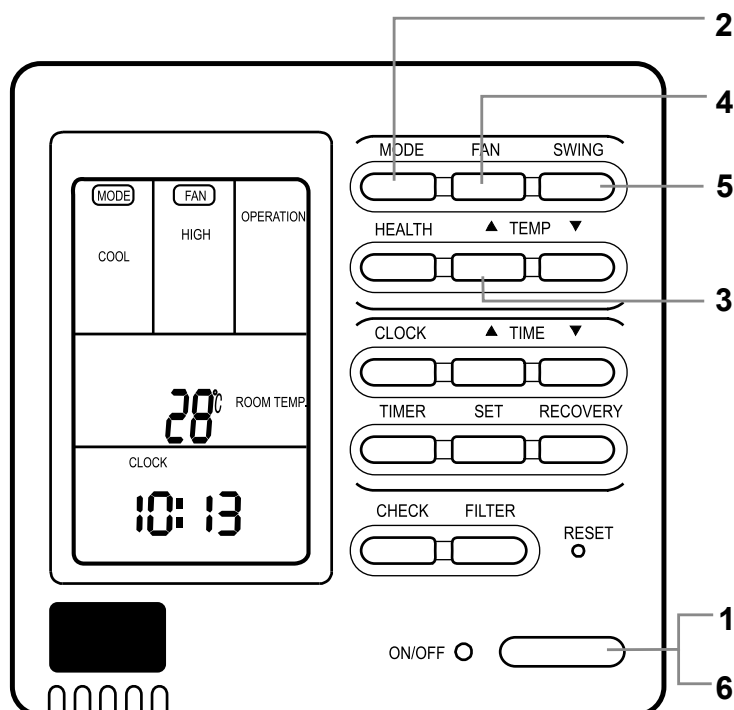
Do on and off function. The unit is on when pressing it; and is off when pressing it again.

**Reset key**

When in abnormal state, push the reset key with a spike, which may return the unit to normal



## ON/OFF operation



Press ON/OFF switch on line controller directly

The line controller displays the running state in the latest time (timing and swing state may not be displayed).

### 1. Press "ON/OFF" switch.

The air conditioner starts operating, and the light on the wired controller is on.

### 2. Choose operation mode.

Press "mode" switch to change to "AUTO"---"FAN ONLY"---"COOL"---"DRY"---"HEAT".

### 3. Press "TEMP" switch

Change set temperature: press TEMP ▲ or TEMP ▼ every time, [SET] will display, and set temperature will increase/ reduce 1°C

### 4. Press "FAN SPEED" switch

FAN ONLY Operation:

Press "FAN SPEED" switch to change to "HIGH"--"MED"--"LOW"--"HIGH"

In AUTO, COOL, DRY, HEAT Operation:

Press "FAN SPEED" switch to change to "AUTO"--"HIGH"--"MED"--"LOW"--"AUTO"

### 5. Press "SWING" switch on the line controller to swing the wind screen.

### 6. Press "ON/OFF" switch, off.

The light on the line controller is off.

### Note

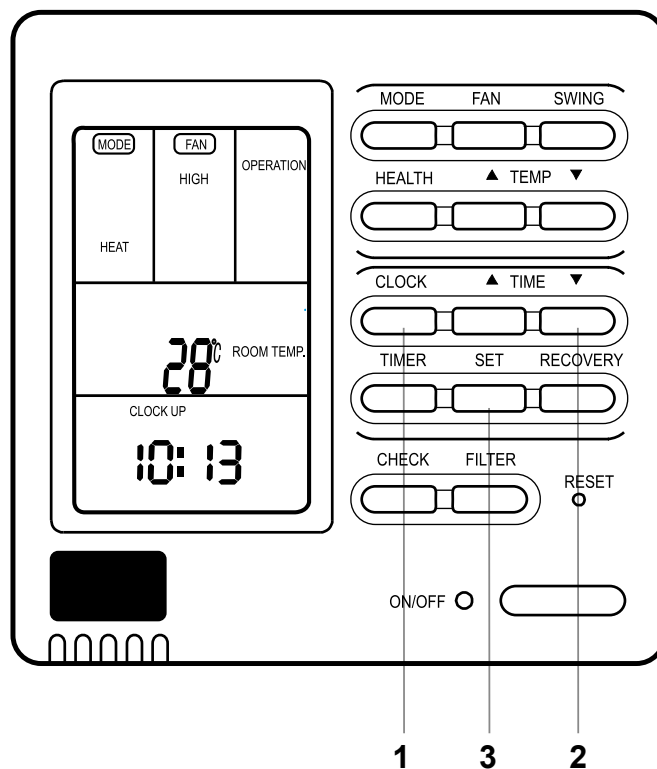
Several seconds after the operation of the line controller, the setting of the unit will change.

### Remarks

- Avoid pressing "ON/OFF" switch frequently.
- Do not press line controller or switches by sharp objects.
- The temperature is on the basis of the setting value. The wind temperature may not reach the setting value because of the outer air conditioner and system protection.
- When the wired controller is power on, the screen fully displays it for two seconds. and clock zone "8888"--"888"--"88"--"8" flicker for 30 seconds. All the switches are invalid at the time.

## Present time setting

- The timing is based on the real time. Thus, the real time should be regulated in advance.
- The clock regulation steps are as follows:



### 1. Press "CLOCK" switch

"CLOCK" flickers, and the time displayed is the real time.

### 2. Press "▲" and "▼" to regulate the time.

The time increases a minute each time you press "▲" switch.

The time decreases a minute each time you press "▼" switch.

### 3. Press "SET" switch. The setting is achieved.

#### Notes

- If not in timing, the screen displays the real time.
- If in timing, the screen displays the timing time.
- If you want to know the real time, go to the first step.

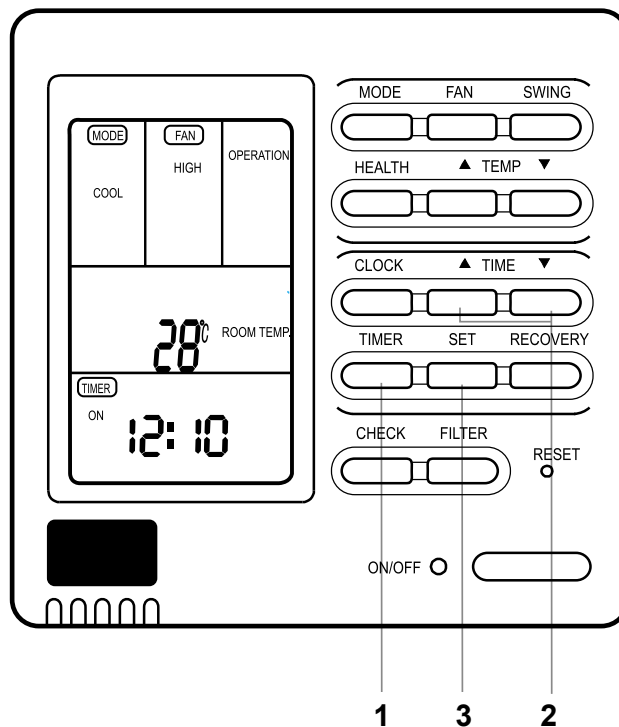
#### Setting of power failure compensation function

When SW1-6 on PCB of wire controller is OFF, it will be in power failure compensation. If the SW1-6 is ON, it has no compensation function.

When the power is on after blackout, the unit will return to the former state if compensation function is set. Otherwise, it will stop. When restarting the unit, press "ON/OFF" switch on wired controller.

## Timing setting

- OFF timing: when a set time has elapsed, the unit stops running.
- ON timing: when a set time has elapsed, the unit starts.

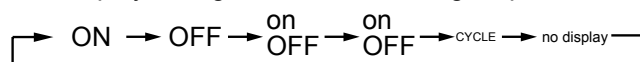


Press "ON/OFF" switch firstly, and set up operation mode.  
Please regulate the clock in advance before using the timing function.

**1. Press "TIMER" switch.**

**1. Press "TIMER" switch.**

The display changes with the following sequence:



**2. Set up "TIMER"**

The display changes with the following sequence:

When timing ON or timing OFF flickers, press "▲" or "▼" to regulate the time

Press "▲" or "▼" set up ON/OFF time.

The setting time increases ten minutes each time you press "▲" switch.

The setting time decreases ten minutes each time you press "▼" switch.

When setting timing ON and timing OFF at the same time, press "timing" switch to change the setting item.

**3. Time setting is achieved. Press "setting" switch.**

### Cancel timing

If you want to change the timing mode to normal operation, press "timing" until there is no timing display. When the timing is invalid, the mode is in normal operation.

**Parts of wired controller explanation :**

1. The unit starts or stops at the setting time. Meanwhile, it displays the timing time.

2. "ON Timing, OFF timing and circulation" means that the unit is on and off at the setting time everyday.

### Note

- The shorter setting time will be carried out firstly.
- If the ON timing and OFF timing are the same, the setting is invalid.
- Even in timing condition, you may start or close the unit through pressing "ON/OFF" switch.

### Query indoor malfunction history:

In the state of power on or power off, press [CHECK] button, enter the malfunction-querying mode of all indoor units in the group. Then [CHECK] and [UNIT NO.] will display, and the actual indoor numbers will be displayed in some sequence (unit number is in decimals). At the same time, in the time region, there will be the current malfunction and the latest time malfunction, the displaying format is [XX:YY], in which XX stands for the current malfunction, if normal, it will display "--"; YY stands for the latest time malfunction. The failure code of every unit will display for 3 seconds. After the failure codes of all indoor units in the whole group are displayed, the mode will quit automatically.

### How to change the function switches?

No.	Type	State of switch	Function description
SW1-1	Select the master or the slave controller	ON	Set as the slave controller
		OFF	Set as the master controller
SW1-2	Select the controller mode	ON	Standard controller
		OFF	Air handler controller
SW1-3	Room temperature display option	ON	visible room temperature
		OFF	Invisible room temperature
SW1-4	26 <sup>o</sup> lock	ON	Unavailable 26 <sup>o</sup> lock
		OFF	Available 26 <sup>o</sup> lock
SW1-5	Temperature sensor position option	ON	Sensor of the controller
		OFF	Sensor in the unit
SW1-6	Auto restart	ON	Unavailable
		OFF	Available
SW1-7	Factory Setting	ON	Default setting
SW1-8	Factory Setting	OFF	Default setting

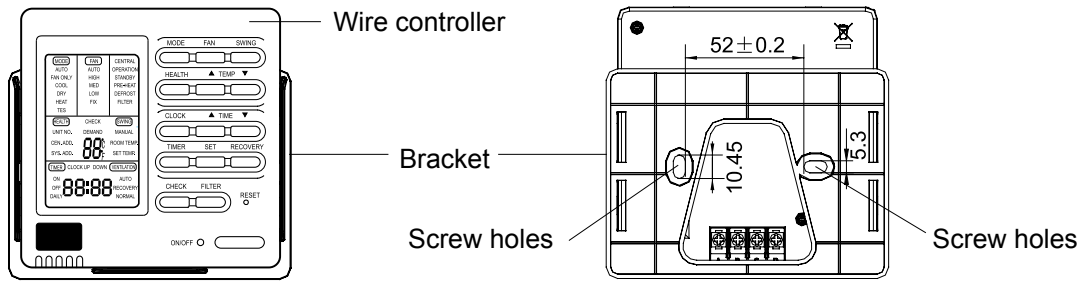
### Note

- Switches or jumper wire must be adjusted when the wire controller is powered off. If the wire controller is powered on, the above operations will be invalid.
- Function difference between master wire controller and slave one:

Contrastive items	Master wire controller	Slave wire controller
Function	All of functions	Only with below functions: ON/OFF, MODE, FAN SPEED, SET TEMP., SWING

### • Installation Manual For Wire Controller

#### 1. Take down wire controller from the holder



#### 2. Install the controller holder

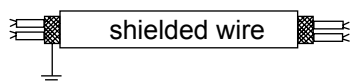
According to the position of 2 screw holes on the holder, drill 2 holes on the wall, and strike the wood stopper to the holes respectively. Then align the 2 screw holes of wired controller holder to the wood stopper, fix the holder on the wall with wood screw.

**Note:**

Try a wall as flat as possible for installation. Don't use excessive force to tighten screws, otherwise, the holder will be damaged.

### 3. Wiring instruction

Use shielded wire between indoor and wire controller. And be earthed on one side, or the unit will not work normally because of interference.



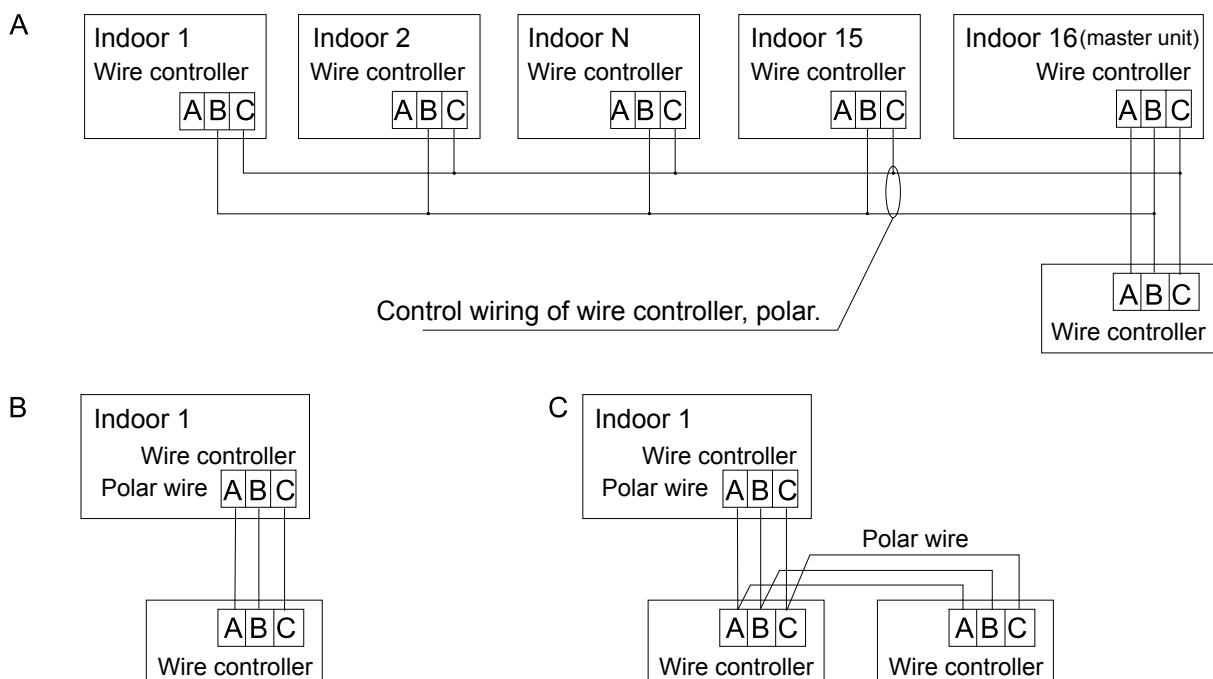
grounding

**Note:**

Confirm the terminal connection firmly, and do not get in touch with shielded wire. Don't touch the PC panel with your hands.

### 4. Place wire controller on the holder, and pay attention not to pressing any wires.

### 5. Wiring connections of wire controller:



There are three methods to connection wire controller and the indoor units:

A. One wired controller can control max. up to 16 sets of indoor units, and 3 pieces of polar wire must connect the wire controller and the master unit (the indoor unit connected with wire controller directly), the others connect with the master unit through 2 pieces of polar wire.

B. One wire controller controls one indoor unit, and the indoor unit connects with the wire controller through 3 pieces of polar wire.

C. Two wired controllers control one indoor unit. The wire controller connected with indoor unit is called master one, the other is called slave one. Master wire controller and indoor unit; master and slave wire controllers are all connected through 3 pieces of polar wire.

### 6. Communication wiring:

The wire controller is equipped with special communication wiring in the accessories. 3-core terminal (1-white 2-yellow 3-red) is connected with the terminal A, B, C of wire controller respectively.

The communication wiring is 5 meter long; if the actual length is more than it, please distribute wiring according to below table:

Communication wiring length(m)	Dimensions of wiring
$\leq 250$	0.75mm <sup>2</sup> x3-core shielded wire

\*One side of the shielded sheet of communication wire must be earthed.

## 4. Central controller

### 4.1 YCZ-A004



MRV	LCAC			
	Smart Power	Super Match	R410A ON/OFF	R22 ON/OFF
√	√	√	√	√

- Individual control, Group control & Central control (Max 256 indoor units)
- 7-inch TFT LCD touch screen with back light
- Weekly timer
- Indoor units' information edit
- Historical data backup
- \* Must be used in combination with an HA-M\*1 for each MRV system. (Max. 32 sets)

1. YCZ-A004 can control MRV and Super Match (including single split and multi split). 256 indoor units can be controlled when used with MRV and 128 indoor units when with single split & super match.

① When controlling MRV, YCZ-A004 should be used together with IGU05 (or IGU15). One IGU05 is connected with one system of MRV firstly and then all IGU05s are hand in hand connected to YCZ-A004.

How to choose MRV: System Settings-Local-Type Select-MRV.

② When YCZ-A004 controls the Super Match series, each indoor unit requires one YCJ-A002 as the adapter. The YCJ-A002 adapters are connected with YCZ-A004 hand in hand.

How to choose multi: System settings — Local – Type Select– Single.

2. Main functions of central controller

① Monitoring and controlling indoor running state such as ON/OFF, Mode, Fan, Set temp. and error code.

② Zone setting, editing and deleting.

③ Realizing ON/OFF, mode, fan, temperature setting for single/zone/all indoor unit(s).

④ Checking indoor unit detailed information such as real temperature, coil temperature, error code.

⑤ For MRV, three kinds of controlling mode: LIFO, Central & Force can be selected for indoor units; while only Force & LIFO mode can be selected for single split unit.

LIFO: the indoor unit will execute the last order send by central controller, wired controller or remote controller. For example, if firstly sending low speed fan order by central controller and then sending high speed fan order by wired controller, the indoor unit will execute high fan.

Central: central controller enjoys all functions while wired & remote controller can only control ON/OFF of indoor units.

Force: central controller enjoys all functions while wired & remote controller cannot control indoor units.

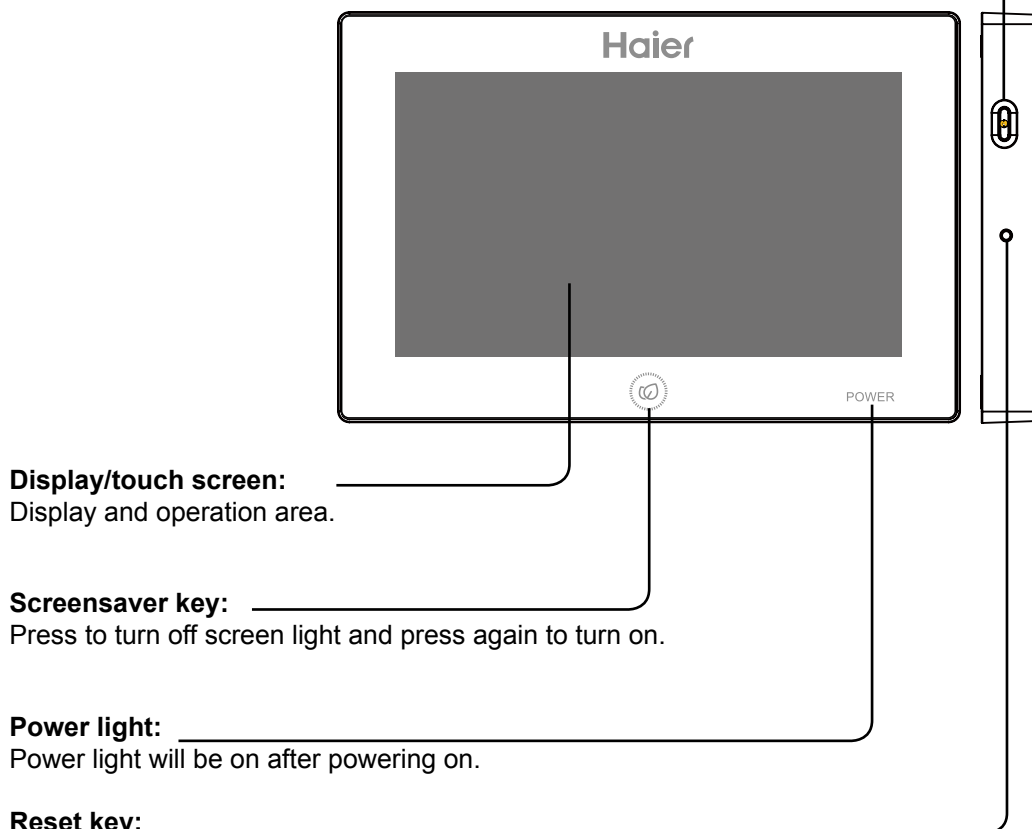
⑥ Receiving outer signal input: when receiving outer fire alarm signal, central controller will turn all indoor units off.

⑦ Weekly timer setting. Weekly timer for one or some or all units can be set and can run in cycle.

## Part info for central controller

### ON/OFF key:

Press the ON/OFF key for 2-3 seconds to turn on the controller after powering on. Keep pressing the ON/OFF key for 5 seconds to turn off.



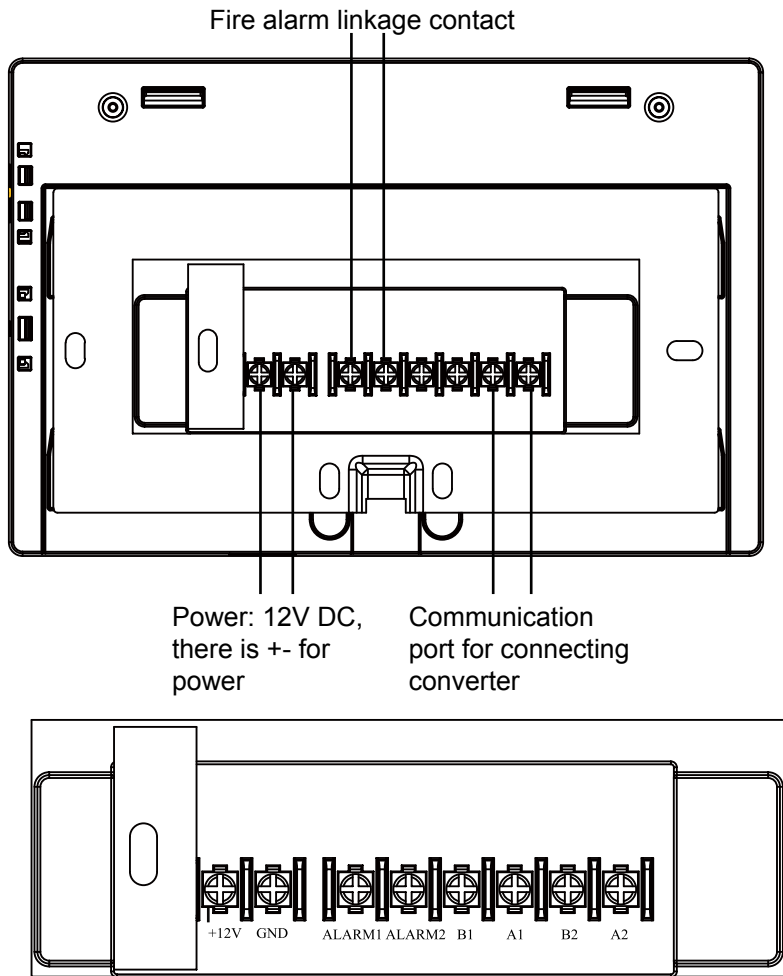
**Display/touch screen:** Display and operation area.

**Screensaver key:** Press to turn off screen light and press again to turn on.

**Power light:** Power light will be on after powering on.

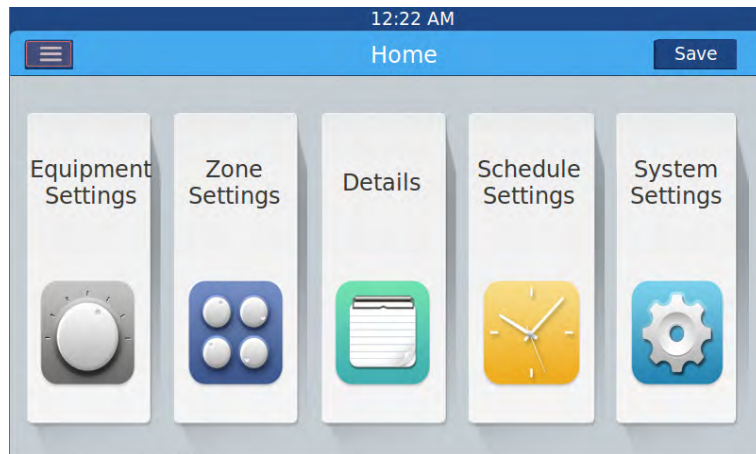
**Reset key:** Press to reboot central controller.








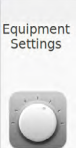
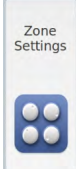
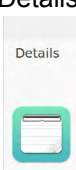
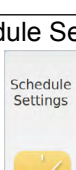
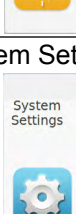


Power (12V, GND): 12V DC, please pay attention to +-of power.  
 Fire alarm linkage contact (ALARM1, ALARM2): AC works normally when closed and all AC turned off when open circuit.  
 Third party interface (B1, A1): A1 should be connected to 485+ while B1 485-.  
 Communication port (B2, A2): It is used for connecting converter, please pay attention to +-. A2 should be connected to 485+ while B2 485-.

**Page & Key Explanation**



After turning on central controller, home page will show as above and detailed menu is as following:

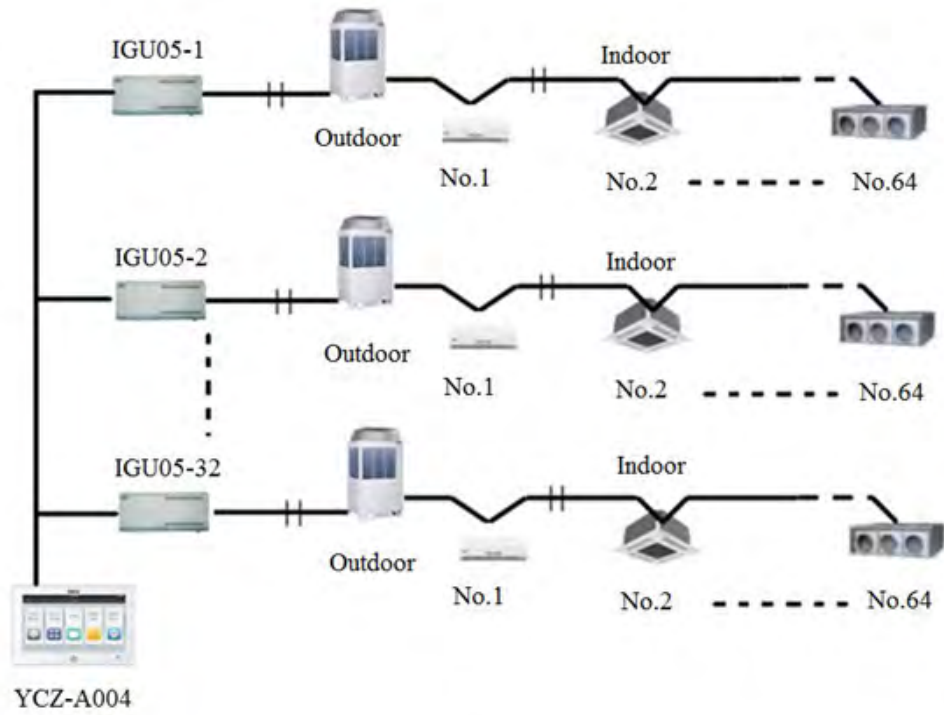
Menu/icon	Function
AC detailed menu 	POP will show after click the icon:  Online AC qty: indicating indoor unit quantity in good communication.  Offline AC qty: indicating indoor unit quantity in good communication previously and then in bad communication  AC qty set in timer: indicating AC quantity set timer function  Error AC qty: indicating AC quantity in malfunction.
Equipment Settings 	Press to enter equipment setting interface and do settings as follows: Display all AC list and condition information. Turning page for more information AC mode can be checked and adjusted according to zone/group. And application range can be selected and it can realize All on/All off function.
Zone Settings 	Press to enter Zone Settings interface and do settings as follows: Add/delete group, choose AC, edit group name.
Details 	Click to enter details interface, in which, the following information can be seen: AC condition/mode condition, error code, running time & parameters.
Schedule Settings 	Click to enter schedule settings interface, the following setting can be operated: After entering, it will display all schedule settings lists. One or multi days in a week can be chosen for timing setting. Timer on/off, temperature, mode, fan, temperature range(16-30°C), etc.
System Settings 	Click to enter the interface, and the following setting can be operated: It includes Extra, Energy, Password and Local settings. After clicking icon, relevant operations can be done.

### Address Setting When Using Central Controller

When applying central controller, it is required to set address by dip switch for easy checking and maintenance.

#### When controlling MRV

System structure chart when controlling MRV:



For every system of AC, address starts from No. 1 to last indoor unit of the system. If totally 20 indoor units are connected in one system, address should be 1-20; if 50 in one system, address should be 1-50; the biggest address is 64.

Note: every indoor address starts from 1.

## 1. Indoor address setting

The address used in central control or energy system								Central address
SW03								
( 1 )	( 2 )	( 3 )	( 4 )	( 5 )	( 6 )	( 7 )	( 8 )	
1	0	0	0	0	0	0	0	Central address=1
1	0	0	0	0	0	0	1	Central address=2
1	0	0	0	0	0	1	0	Central address=3
1	0	0	0	0	0	1	1	Central address=4
1	0	0	0	0	1	0	0	Central address=5
1	0	0	0	0	1	0	1	Central address=6
1	0	0	0	0	1	1	0	Central address=7
1	0	0	0	0	1	1	1	Central address=8
1	0	0	0	1	0	0	0	Central address=9
1	0	0	0	1	0	0	1	Central address=10
1	0	0	0	1	0	1	0	Central address=11
1	0	0	0	1	0	1	1	Central address=12
1	0	0	0	1	1	0	0	Central address=13
1	0	0	0	1	1	0	1	Central address=14
1	0	0	0	1	1	1	0	Central address=15
1	0	0	0	1	1	1	1	Central address=16
1	0	0	1	0	0	0	0	Central address=17
1	0	0	1	0	0	0	1	Central address=18
1	0	0	1	0	0	1	0	Central address=19
1	0	0	1	0	0	1	1	Central address=20
1	0	0	1	0	1	0	0	Central address=21
1	0	0	1	0	1	0	1	Central address=22

The address used in central control or energy system								
SW03								Central address
( 1 )	( 2 )	( 3 )	( 4 )	( 5 )	( 6 )	( 7 )	( 8 )	
1	0	0	1	0	1	1	0	Central address=23
1	0	0	1	0	1	1	1	Central address=24
1	0	0	1	1	0	0	0	Central address=25
1	0	0	1	1	0	0	1	Central address=26
1	0	0	1	1	0	1	0	Central address=27
1	0	0	1	1	0	1	1	Central address=28
1	0	0	1	1	1	0	0	Central address=29
1	0	0	1	1	1	0	1	Central address=30
1	0	0	1	1	1	1	0	Central address=31
1	0	0	1	1	1	1	1	Central address=32
1	0	1	0	0	0	0	0	Central address=33
1	0	1	0	0	0	0	1	Central address=34
1	0	1	0	0	0	1	0	Central address=35
1	0	1	0	0	0	1	1	Central address=36
1	0	1	0	0	1	0	0	Central address=37
1	0	1	0	0	1	0	1	Central address=38
1	0	1	0	0	1	1	0	Central address=39
1	0	1	0	0	1	1	1	Central address=40
1	0	1	0	1	0	0	0	Central address=41
1	0	1	0	1	0	0	1	Central address=42
1	0	1	0	1	0	1	0	Central address=43
1	0	1	0	1	0	1	1	Central address=44
1	0	1	0	1	1	0	0	Central address=45
1	0	1	0	1	1	0	1	Central address=46
1	0	1	0	1	1	1	0	Central address=47
1	0	1	0	1	1	1	1	Central address=48
1	0	1	1	0	0	0	0	Central address=49
1	0	1	1	0	0	0	1	Central address=50

The address used in central control or energy system									
SW03								Central address	
( 1 )	( 2 )	( 3 )	( 4 )	( 5 )	( 6 )	( 7 )	( 8 )		
1	0	1	1	0	0	1	0	Central address=51	
1	0	1	1	0	0	1	1	Central address=52	
1	0	1	1	0	1	0	0	Central address=53	
1	0	1	1	0	1	0	1	Central address=54	
1	0	1	1	0	1	1	0	Central address=55	
1	0	1	1	0	1	1	1	Central address=56	
1	0	1	1	1	0	0	0	Central address=57	
1	0	1	1	1	0	0	1	Central address=58	
1	0	1	1	1	0	1	0	Central address=59	
1	0	1	1	1	0	1	1	Central address=60	
1	0	1	1	1	1	0	0	Central address=61	
1	0	1	1	1	1	0	1	Central address=62	
1	0	1	1	1	1	1	0	Central address=63	
1	0	1	1	1	1	1	1	Central address=64	
	0		No need to add 64 to central address					Stay as 0	
	1		Add 64 to central address						
0			Central address set by wired controller is available						
1			Central address set by wired controller is unavailable					Stay as 1	

## 2. Converter address setting

1	2	3	4	5	6	7	8	Converter address
-	-	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
-	-	--	-	-	-	-	-	Reserved
-	-	-	-	-	--	-	-	Reserved

If one indoor unit is connected to IGU05 addressed as No. 1, and its central address is No. 6, the indoor code displayed on central controller is 1-6; if one indoor unit is connected to IGU05 addressed as No. 5, and its central address is No. 20, the indoor code displayed on central controller is 5-20.

Note: when controlling MRV, the YCZ-A004 can control max. 32 IGU05 and max. 256 indoor units. If IGU05 is more than 32 while indoor quantity is less than 256, another YCZ-A004 is needed because IGU05 exceeds 32; If IGU05 is less than 32 while indoor quantity is more than 256, another YCZ-A004 is needed because indoor quantity exceeds 256.

When choose MRV in System settings,HRV can be controlled, 485 terminal of HRV together with IGU05 are hand in hand connected to YCZ-A004, SW903\_2,3 is used to set address, 00~11 stands for indoor unit 1~4, total amount of HRV and MRV indoor units cannot exceed 256.

Please check HRV setting for wire connection and cautions. Functions such as ON/OFF and single unit control can be realized, but zoning and schedule setting are not available.

### 3. Third party interface

Communication parameter:

Slave ID is gateway's address	
Function code: inquiry 03H; control 10H	
Communication parameter	Point type
Baud rate: 9600	DI: switching value input signal
data bits: 8	DO: switching value output signal
Check bit: None	AI: analog quantity input signal
Stop bit: 1	AO: analog quantity output signal
Start bit: 1, One frame command finished, using CRC to check	

Point table:

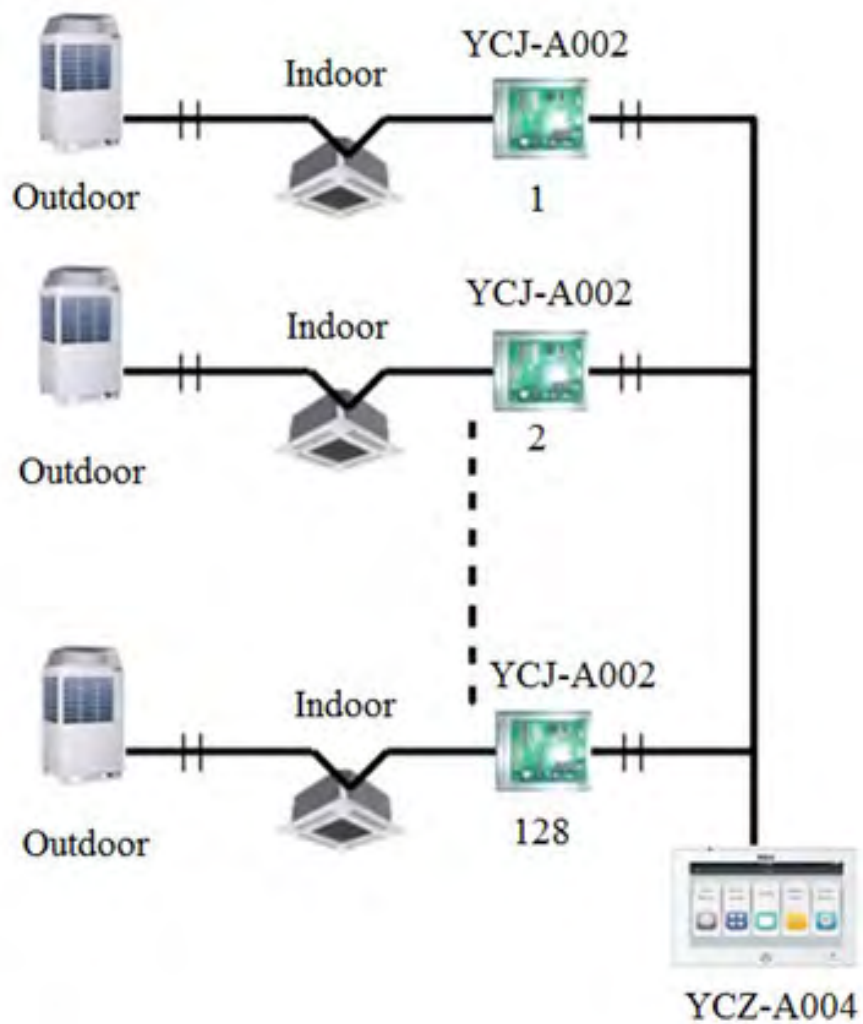
Point description	Protocol address	Extra address	Point type	State
All On/All Off	40006		AO (Write)	1: All On 0: All Off
Indoor unit (1-64) ON/OFF setting	40011-40014	0-15	DO (Write)	1: ON 0: OFF
Indoor unit (1-64) ON/OFF state	40015-40018	0-15	DI (Read)	1: ON 0: OFF
Indoor unit (1-64) Malfunction state	40019-40022	0-15	DI (Read)	1: Error 0: Normal
Indoor unit 1 ON/OFF setting	40031		AO (Write)	1: ON, 0: OFF
Indoor unit 1 mode setting	40032			0: Auto, 1: Fan 2: Cooling, 3: Dry 4: Heating
Indoor unit 1 temperature setting	40033			Integer from 16 to 30
Indoor unit 1 fan speed setting	40034			0: Auto, 1: Low 2: Medium, 3: High
Indoor unit 1 ON/OFF state	40035		AI (Read)	1: ON, 0: OFF
Indoor unit 1 mode	40036			0: Auto, 1: Fan 2: Cooling, 3: Dry 4: Heating
Indoor unit 1 set temperature	40037			1 to 16 represents 16°C to 30°C
Indoor unit 1 current fan speed	40038			0: Auto, 1: Low 2: Medium, 3: High
Indoor unit 1 current temperature	40039			Integer between -20 and 50
Indoor unit 1 error code	40040			Integer from 0 to 150



Point description	Protocol address	Extra address	Point type	State
Indoor unit 2 ON/OFF setting	40041		AO (Write)	1: ON, 0: OFF
Indoor unit 2 mode setting	40042			0: Auto, 1: Fan 2: Cooling, 3: Dry 4: Heating
Indoor unit 2 temperature setting	40043			Integer from 16 to 30
Indoor unit 2 fan speed setting	40044			0: Auto, 1: Low 2: Medium, 3: High
Indoor unit 2 ON/OFF state	40045		AI (Read)	1: ON, 0: OFF
Indoor unit 2 mode	40046			0: Auto, 1: Fan 2: Cooling, 3: Dry 4: Heating
Indoor unit 2 set temperature	40047			1 to 16 represents 16°C to 30°C
Indoor unit 2 current fan speed	40048			0: Auto, 1: Low 2: Medium, 3: High
Indoor unit 2 current temperature	40049			Integer between -20 and 50
Indoor unit 2 error code	40050			Integer from 0 to 150
----	----			----
Indoor unit 64 ON/OFF setting	40661		AO (Write)	1: ON, 0: OFF
Indoor unit 64 mode setting	40662			0: Auto, 1: Fan 2: Cooling, 3: Dry 4: Heating
Indoor unit 64 temperature setting	40663			Integer from 16 to 30
Indoor unit 64 fan speed setting	40664			0: Auto, 1: Low 2: Medium, 3: High
Indoor unit 64 ON/OFF state	40665		AI (Read)	1: ON, 0: OFF
Indoor unit 64 mode	40666			0: Auto, 1: Fan 2: Cooling, 3: Dry 4: Heating
Indoor unit 64 set temperature	40667			1 to 16 represents 16°C to 30°C
Indoor unit 64 current fan speed	40668			0: Auto, 1: Low 2: Medium, 3: High
Indoor unit 64 current temperature	40669			Integer between -20 and 50
Indoor unit 64 error code	40670			Integer from 0 to 150

## When controlling single or multi split

### 1. System structure chart when controlling single split:



One YCJ-A002 is needed for every indoor unit. Max. 128 YCJ-A002 (as well as max. 128 indoor units) can be connected.

**2. One indoor unit needs one converter YCJ-A002, YCJ-A002 addressing as follows:**

SW01								Definition
[8]	[7]	[6]	[5]	[4]	[3]	[2]	[1]	
0	--	--	--	--	--	--	--	Single mode
1	--	--	--	--	--	--	--	Twin units shifting mode
--	0	0	--	--	--	--	--	Shifting time 1—8 hours
--	0	1	--	--	--	--	--	Shifting time 2—10 hours
--	1	0	--	--	--	--	--	Shifting time 3—12 hours
--	1	1	--	--	--	--	--	Shifting time 4—14 hours
--	--	--	0	--	--	--	--	Twin units running mode when room temp. $\geq 26^{\circ}\text{C}$
--	--	--	1	--	--	--	--	Twin units running mode when room temp. $\geq 24^{\circ}\text{C}$
--	--	--	--	0	0	0	0	Central address in twin shifting mode=1
--	--	--	--	0	0	0	1	Central address in twin shifting mode=2
----								----
--	--	--	--	1	1	1	0	Central address in twin shifting mode=15
--	--	--	--	1	1	1	1	Central address in twin shifting mode=16
--	0	0	0	0	0	0	0	Central address=1
--	0	0	0	0	0	0	1	Central address =2
----								----
--	1	1	1	1	1	1	0	Central address =127
--	1	1	1	1	1	1	1	Central address=128

YCZ-A004 can control at most 128 indoor units when controlling single or multi split.

**3. Third party interface**

Communication parameter:

Slave ID : 1	
Function code: inquiry 03H; control 10H	
Communication parameter	Point type
Baud rate: 9600	DI: switching value input signal
data bits: 8	DO: switching value output signal
Check bit: None	AI: analog quantity input signal
Stop bit: 1	AO: analog quantity output signal
Start bit: 1, One frame command finished, using CRC to check	

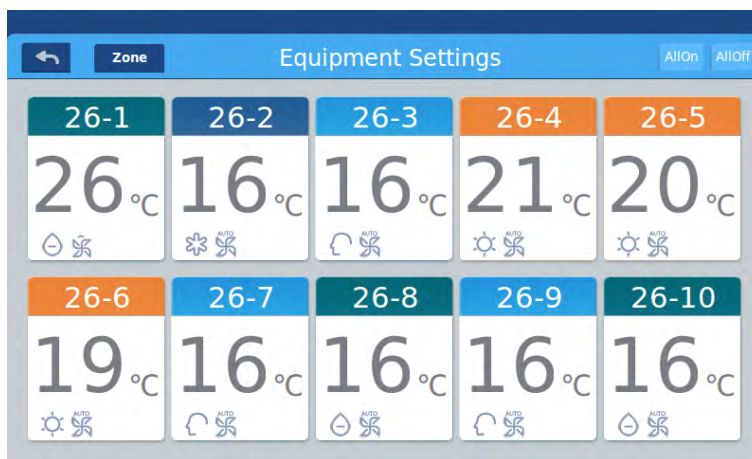
Point table:

Point description	Protocol address	Extra address	Point type	State
All On/All Off	40006		AO (Write)	1: All On 0: All Off
Indoor unit (1—128) ON/OFF setting	40011-40018	0-15	DO (Write)	1: ON 0: OFF
Indoor unit (1—128) ON/OFF state	40019-40026	0-15	DI (Read)	1: ON 0: OFF
Indoor unit (1—128) Malfunction state	40027-40034	0-15	DI (Read)	1: Error 0: Normal
Indoor unit 1 ON/OFF setting	40043		AO (Write)	1: ON, 0: OFF
Indoor unit 1 mode setting	40044			0: Auto, 1: Fan 2: Cooling, 3: Dry 4: Heating
Indoor unit 1 temperature setting	40045			Integer from 16 to 30
Indoor unit 1 fan speed setting	40046			0: Auto, 1: Low 2: Medium, 3: High
Indoor unit 1 ON/OFF state	40047		AI (Read)	1: ON, 0: OFF
Indoor unit 1 mode	40048			0: Auto, 1: Fan 2: Cooling, 3: Dry 4: Heating
Indoor unit 1 set temperature	40049			1 to 16 represents 16°C to 30°C
Indoor unit 1 current fan speed	40050			0: Auto, 1: Low 2: Medium, 3: High
Indoor unit 1 current temperature	40051			Integer between -20 and 50
Indoor unit 1 error code	40052			Integer from 0 to 150
Indoor unit 2 ON/OFF setting	40053		AO (Write)	1: ON, 0: OFF
Indoor unit 2 mode setting	40054			0: Auto, 1: Fan 2: Cooling, 3: Dry 4: Heating
Indoor unit 2 temperature setting	40055			Integer from 16 to 30
Indoor unit 2 fan speed setting	40056			0: Auto, 1: Low 2: Medium, 3: High
Indoor unit 2 ON/OFF state	40057		AI (Read)	1: ON, 0: OFF
Indoor unit 2 mode	40058			0: Auto, 1: Fan 2: Cooling, 3: Dry 4: Heating
Indoor unit 2 set temperature	40059			1 to 16 represents 16°C to 30°C
Indoor unit 2 current fan speed	40060			0: Auto, 1: Low 2: Medium, 3: High
Indoor unit 2 current temperature	40061			Integer between -20 and 50
Indoor unit 2 error code	40062			Integer from 0 to 150
---	---	---	---	---

Point description	Protocol address	Extra address	Point type	State
Indoor unit 128 ON/OFF setting	41313		AO (Write)	1: ON, 0: OFF
Indoor unit 128 mode setting	41314			0: Auto, 1: Fan 2: Cooling, 3: Dry 4: Heating
Indoor unit 128 temperature setting	41315			Integer from 16 to 30
Indoor unit 128 fan speed setting	41316			0: Auto, 1: Low 2: Medium, 3: High
Indoor unit 128 ON/OFF state	41317		AI (Read)	1: ON, 0: OFF
Indoor unit 128 mode	41318			0: Auto, 1: Fan 2: Cooling, 3: Dry 4: Heating
Indoor unit 128 set temperature	41319			1 to 16 represents 16°C to 30°C
Indoor unit 128 current fan speed	41320			0: Auto, 1: Low 2: Medium, 3: High
Indoor unit 128 current temperature	41321			Integer between -20 and 50
Indoor unit 128 error code	41322			Integer from 0 to 150


## Function Operation


### Equipment Settings

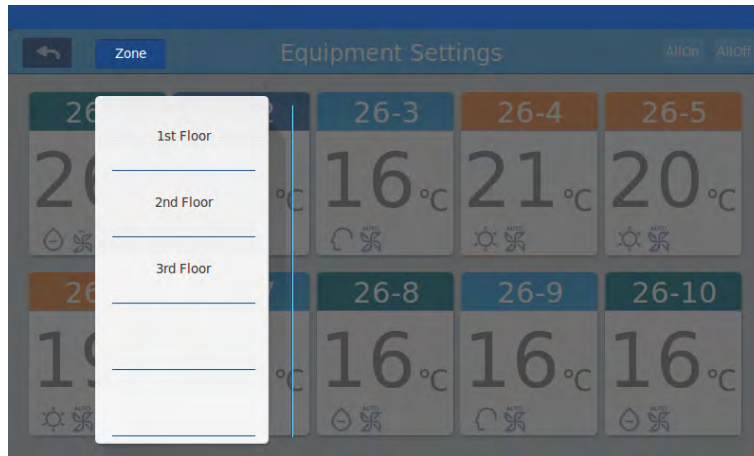


Picture 1

Press the “Equipment Settings” key on home page to enter the display interface as shown in picture 1.

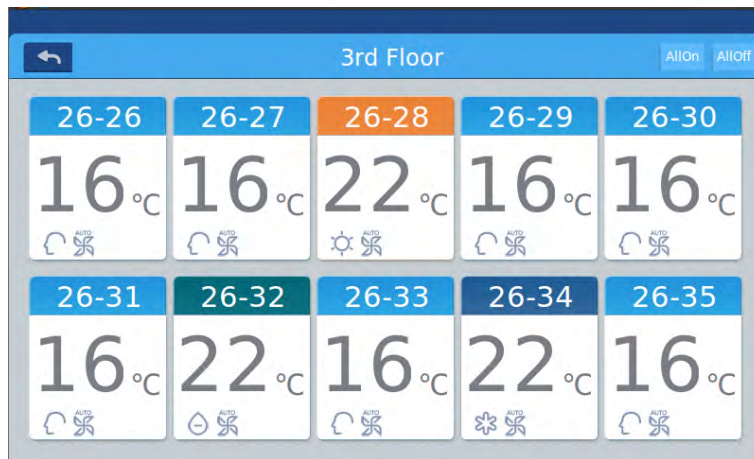
 is the return button. This button is always presented in the column, press this button to return to the last page.

 means you can view air-conditioners as grouping established. Press “Zone” button to pop out all the air-conditioner grouped in pop window. If air-conditioners have not been grouped before, it will show all air-conditioners.



Picture 2

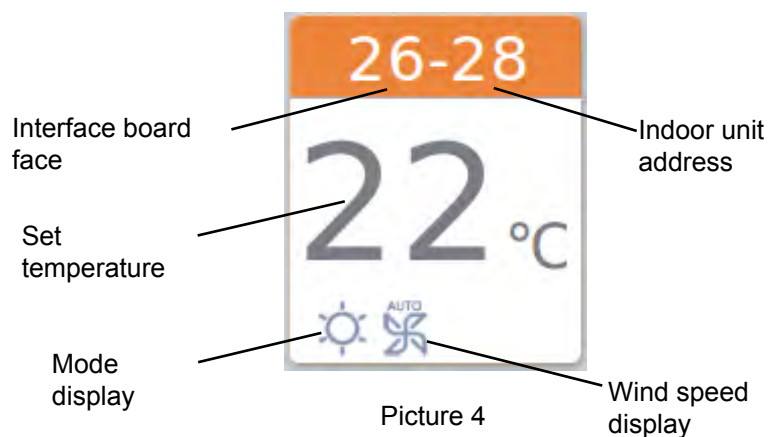
For example: Press the 3rd floor in picture2, it will show all indoor units on the 3rd floor, as shown in picture3.



Picture 3

**AllOn AllOff** is the All on/All off button. If it is displaying all indoor units, then the All on/All off button is used to control all indoor units; if it is displaying the indoor units of one group, then the All on/All off button is used to control the indoor units in this group.

Each grid represents an indoor unit in the air-conditioner display area, and each page can display 10 indoor units. Slide around the screen to turn pages on the screen. Indoor unit is shown as picture 4.

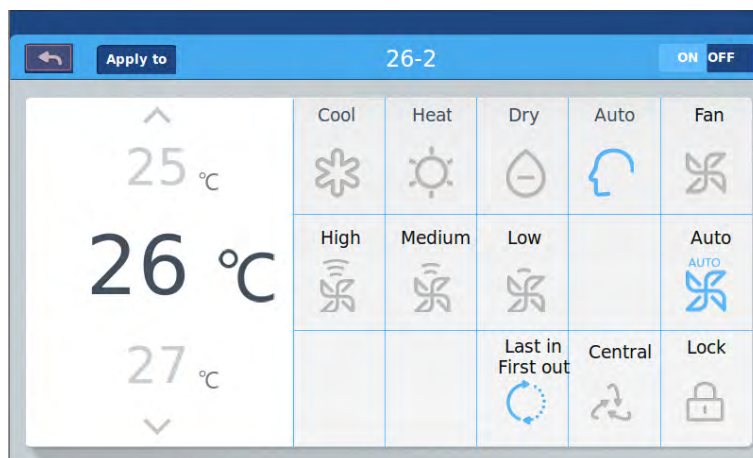


Picture 4

Record: The colors of upper part of the icon represents the operation modes, different mode uses different color to distinguish from each other.

Heating Mode--orange; Cooling Mode--blue; Dry mode--aqua; Fan mode--wathet; Intelligent Mode--wathet.

Press single air-conditioner icon to enter the air-conditioner setting interface, as shown in picture5



Picture 5

### Setting interface:

**Temperature setting:** By sliding up/down the temperature selection area, you can change the setting temperature. It can be changed by pressing arrow  $\wedge$  /  $\vee$  too, press once to adjust it one time.

**Record:** In wind mode, the temperature will be gray and can't be changed.













**Set Mode:** Press the corresponding mode icon, the setting is successful if the icon is lighted up. Only one mode can be chosen.

**Set Wind Speed:** Press the corresponding wind speed icon, the setting is successful if the icon is lighted up. Only one wind speed can be chosen.

**Record:** If you choose the fan mode, you can't choose the automatic wind speed any more.

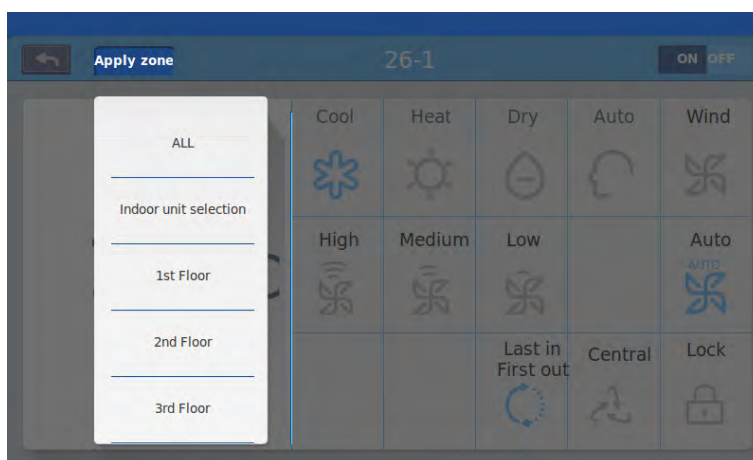
**Set control mode:** Last in first out/Central control/Locked, choose one from these three control mode and the icon will be lighted up (If the current system does not support this setting,the button will be hidden)

### Icon Instruction:

 Cooling Mode	 Last in first out
 Heating Mode	 Central Control
 Dry Mode	 Locked
 Intelligent Mode	 Low Speed
 Wind Mode	 Automatically
 High Speed	 Medium Speed



Batch change the air-conditioner mode setting: After setting one air-conditioner, press **Apply to** and pop window will pop out as shown in picture 6.



Picture 6

If you choose “All”, then all indoor units will operate as ordered.

If you choose “indoor unit selection”, then the page will turn to interface displaying all indoor units, press the indoor unit icons to choose the indoor units (the chosen ones will turn to dark color), they will operate as ordered.

As shown in picture 6, “1st Floor” “2nd Floor” “3rd Floor” are three parted area, choose one area and all indoor units in this area will operate as ordered.

Change the name of the air-conditioner: as shown in picture 7, press the air-conditioner number 26-1, then it will display the textbox “please input device name” and click the blank text box to pop out the keyboard. After typing in the name, press “ENTER” to take back the keyboard, then setting name is finished. The longest name can be 12 English letters.



Picture 7

Such as changing the name to “10-16 general manager office”, after changing it will be displayed in center, when you return to the last layer, the corresponding air-conditioner icon name will also be refreshed.

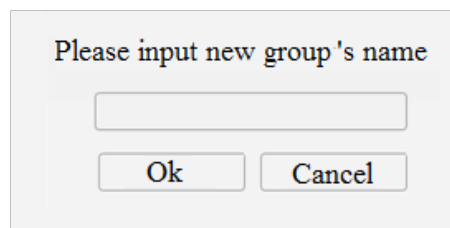


## Zone Settings



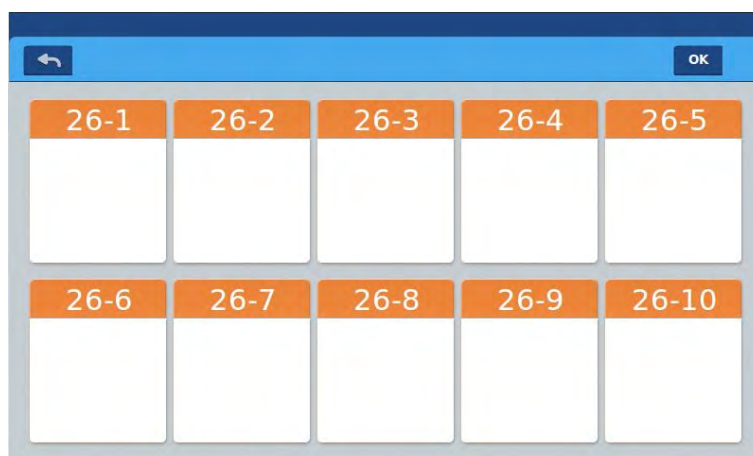
Picture 1

Press zone settings on the homepage to enter the zone setting interface, as shown in picture1. It will display setting groups and adding new group button on the left. It will only display adding new group button initially. It will display those air-conditioners which can be grouped. It will display all air-conditioners initially. Adding new group: press **+** to pop out the window as shown in picture 2.



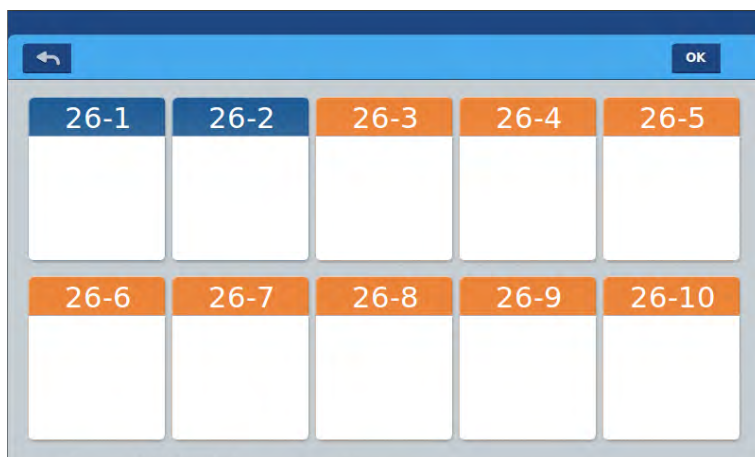
Picture 2

Click the blank text box, enter the group name (up to 12 English letters) by the keyboard, and press the "ENTER" button of the keyboard after entering. Press OK key in the pop window to enter the interface as shown in picture3.




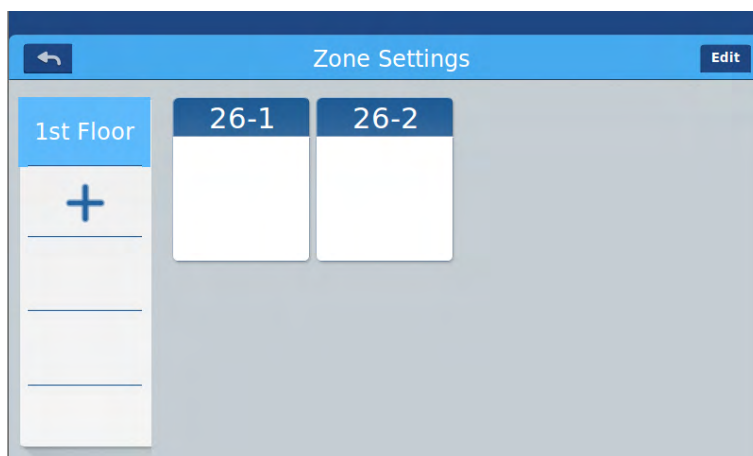
Picture 3

This interface displays air-conditioner numbers, click to choose those air-conditioners need to be added to grouping. It will turn to blue after being selection, click again to cancel the selection. For example: choose indoor units 26-1,26-2, it will display as shown in picture 4.




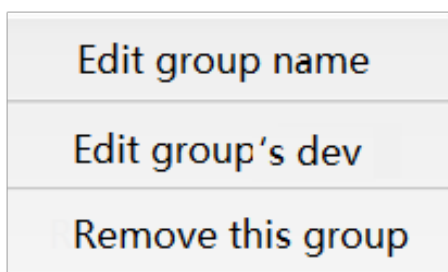
Picture 4

After choosing the air-conditioners, press OK key at the top-right corner, then the grouping is finished, it will create a new group on the left. Click the group name on the left, the background will be highlighted, as these indoor units of the 1st floor area shown in picture5. Each zone supports up to 64 devices. Press  to return to the last layer when grouping air-conditioners.



Picture 5

In picture5, choose one group and then click  button, it will pop out the pop window and it has three lines, as shown in picture6:



Picture 6

Edit group name: press the key to pop out the pop window of changing the group's name.

Edit group's dev: press the key to pop out the list of indoor units to edit the group's dev.

Remove this group: pop out "to remove this group?" and press OK to delete the group, indoor units will come to "ungrouped", press "cancel" to come back to picture 5.

## Details

Press details button on homepage to enter detailed information interface as shown in picture1.

	User Name	Device Addr	Ambient Temp.	Mode	Fan Speed	Gas Pipe Temp	Liquid Pipe Temp	Running Time	Error Code
001	26-1	26-1	20	Heat	Auto	25	25	0:18	0
002	26-2	26-2	20	Auto	Auto	25	25	0:59	0
003	26-3	26-3	20	Heat	Auto	25	25	0:12	0
004	26-4	26-4	20	Auto	Auto	25	25	0:12	0
005	26-5	26-5	20	Auto	Auto	25	25	0:12	0
006	26-6	26-6	20	Auto	Auto	25	25	0:12	0
007	26-7	26-7	20	Cool	Auto	25	25	0:12	0
008	26-8	26-8	20	Auto	Auto	25	25	0:12	0

Picture 1

Vertical axis displays the name of the air-conditioner according to the order of the unit numbers, horizontal axis displays user name, air-conditioner number, setting temperature, setting mode, setting wind speed, gas pipe temperature, liquid pipe temperature, operating time and faults information.

The progress bar is on the right and slide up and down within the progress bar to see all machine details.

Clicking **Clear** to pop out password input window. Inputting password and click "Ok", all current date(except running time) will be cleared. If clicking "Cancel", it will return to previous page.

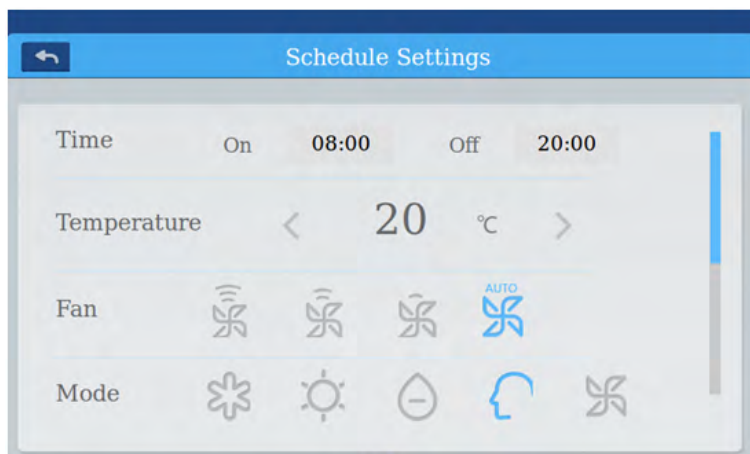
## Schedule Settings

Choose Schedule Settings on the homepage to enter the initial schedule setting interface as shown in picture 1.

No.	Week	On	Off	Setting	Apply to	Enable

Picture 1

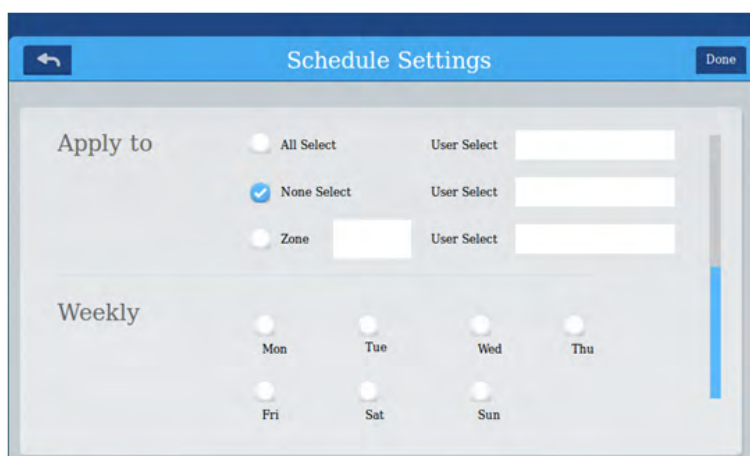
Press **+** to add new schedule settings. Press this button to enter the setting interface, as shown in picture 2, "On" shows when the machine starts up and "Off" shows when the machine shuts down.



Picture 2

Click the time text (such as 08:00 in picture 2) to pop out the window choose the time of startup. Then set the temperature, wind speed and mode. Slide down and set the area applied to and weekly in the interface as shown in picture3.

Time set	
11	17
12	18
01	19



Picture 3

Click "Done" key after setting.

### Apply Zone Settings:

- All select: The default setting is all users. Setting can be changed through the Pop window.
- None select: The default setting is no user. Setting can be changed through the Pop window.
- Zone: Choose zones from the Pop window. The default setting is selecting all the units in this zone. Setting can be changed through the Pop window.

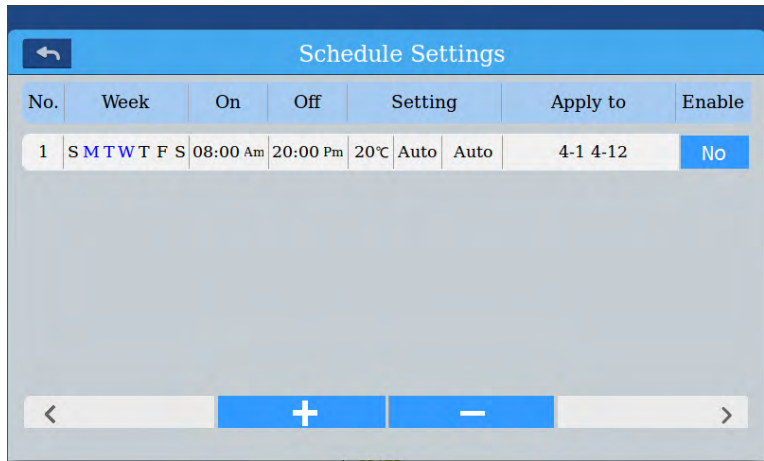
Select those indoor units which you want to choose by clicking the frame before them, it will show hook after selection.

After setting the apply area, click blank area and pull-down lists will close.

### Weekly:

From Monday to Sunday, it will show a hook after click, it will operate the schedule on the day you have chosen, it will circulate weekly.

Schedule will be displayed in the form of picture 4 after set. The table shows the detailed information of this schedule. Click the corresponding item to reset the time, fan speed, mode, and other items as shown in picture 2.

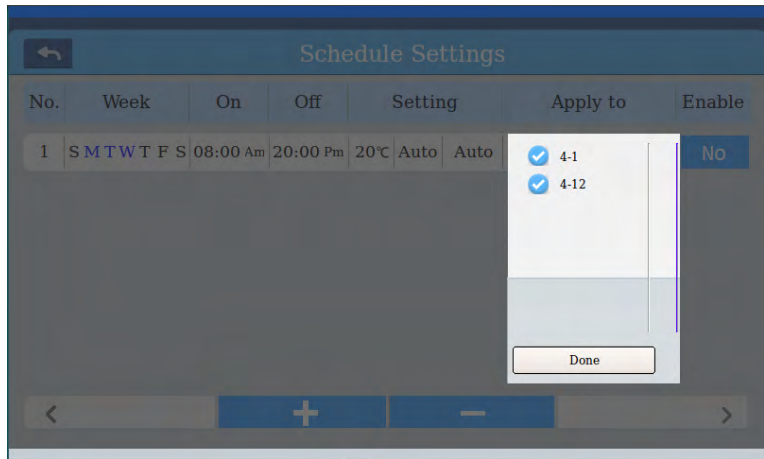


Picture 4

“Enable”: Set the valid/invalid of the schedule.

“Apply to”: Click the table can check which indoor units will active this schedule (picture 5). This table will show the abbreviated information before opening up the Pop window.

Click “-”to change the state to “-”, click “-” to delete this schedule.

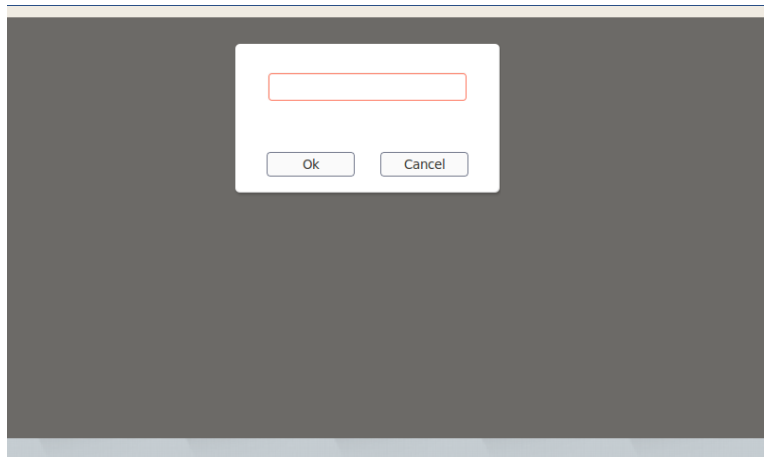


Picture 5

It displays the indoor units above. If there are too many indoor units, you can slide up and down to check them.

**System Settings**

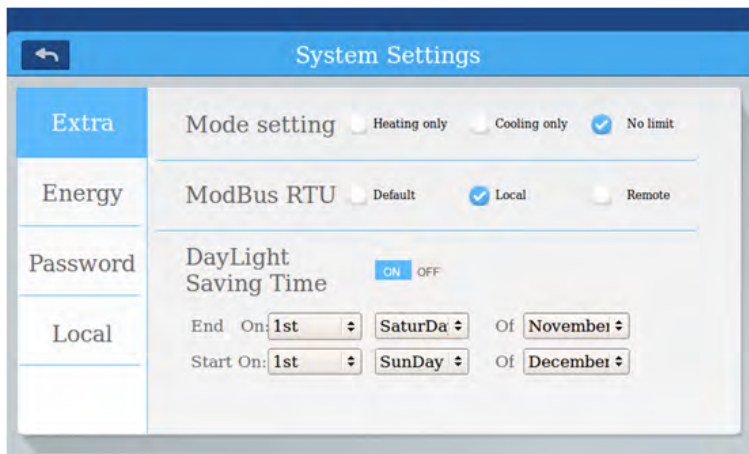
It need password to enter setting page. Click “system settings” button on the home page, you will see the picture1 below.



Picture 1

Click OK key enter system settings page after inputting password. System setting page includes 4 contents, as picture 2.

## Extra



Picture 2

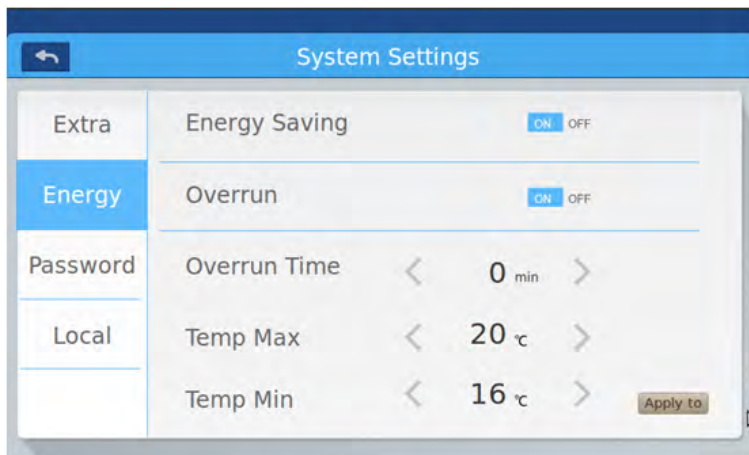
Mode setting: Click  to choose model setting. It will show  if you pitch on. Default is no limit.

Daylight Saving Time: You can set saving function through the button  ON  OFF.

You can select the application range from the bottom menu.

## Energy

As picture 3



Picture 3

Energy Saving: You can set saving function through the button  ON  OFF. Default is "ON".

Overrun: click  ON  OFF to turn ON/OFF this function

Overrun time: press  and  to set the overrun time duration.

Temperature maximum setting: You can turn up or down the maximum temperature through operating  or .

After setting, Click

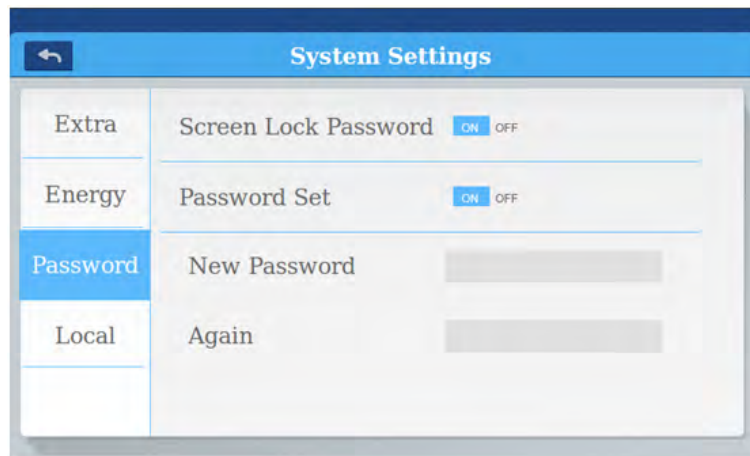
(when remove temperature upper limit of one zone, need to set upper limit 30 and lower limit 16)

Temperature minimum setting: same as above.



## Password

As picture 4



Picture 4

Screen lock password: Press  ON  OFF to turn ON/OFF the screen lock password.

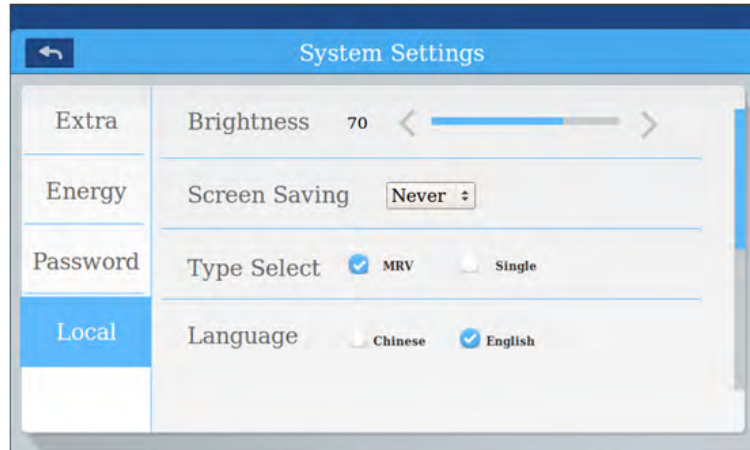
Password setting: You can choose  ON  OFF to decide if password is necessary.

Input/confirm new password: Input the password (length 4-10) twice. It will remind "update password ok", the new password will come into effect when you leave this page. Otherwise it will remind "update password fail".

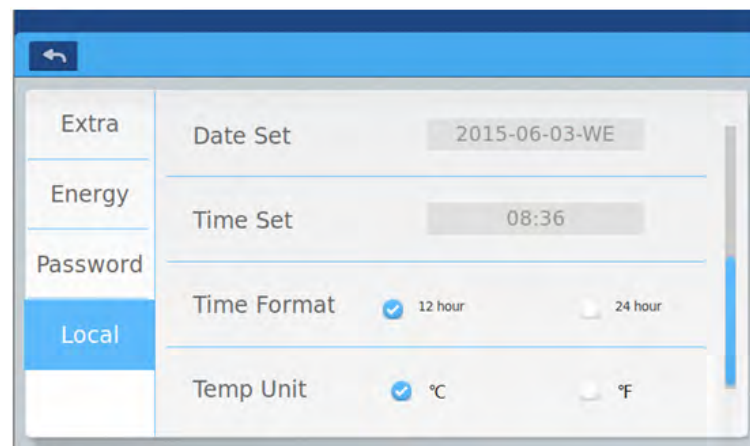
Remark: default password is 12345.

## Local setting

As picture 5 and picture 6

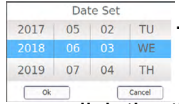


Picture 5

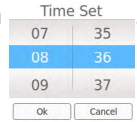


Picture 6

Brightness setting: You can turn up or down through the button  and  .  
 Screen saving: screen saving time can be set: never, 15s, 30s, 1min, 5min, 10min.  
 Type selection: Choose your unit model. It will show  after you pitch on the unit type.  
 Language selection: Choose language. It will show  after you pitch on the language.  
 Date and week setting: It will show a date pop window after you click the date box; you can choose the date and week through



Time setting: It will show a time pop window after you click the time box, you can choose the time through

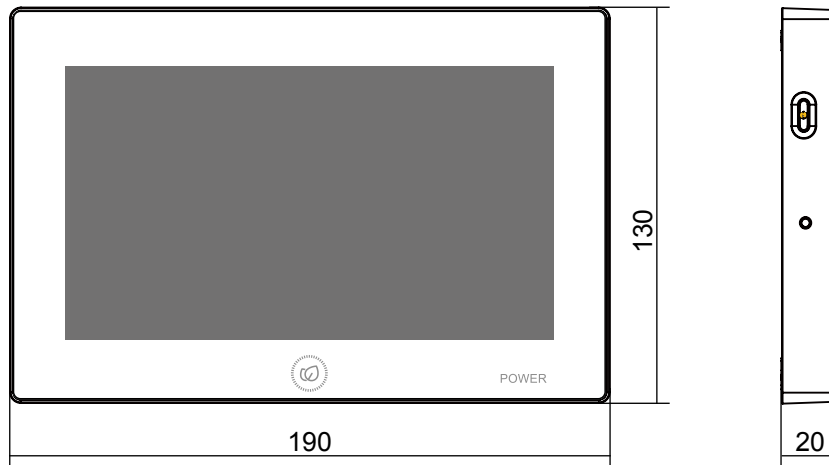


Time format: It will show  after you pitch on the time format.  
 Temperature unit: It will show  after you pitch on the temp. unit.

**Remarks:**

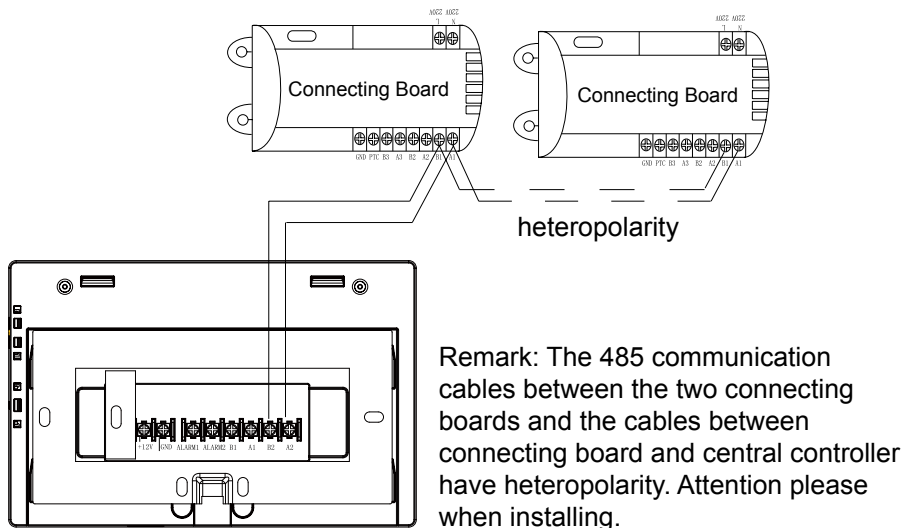
When there is change on device name, zone settings, schedule settings, system settings, press “Save” on the top right corner of home page.

**Installation dimension**



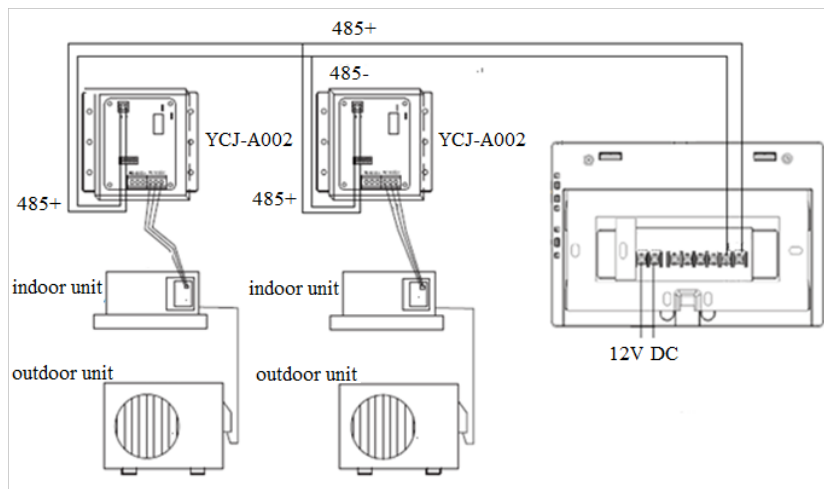
**Wiring diagram**

Wiring diagram between central controller and converter board (IGU05).





## Installation dimension



## Wiring standards

All of the communication cables between each module and terminal module to the central controller are double core shielded twisted-pair cable. Specific wiring as the table below.

The length of signal line	Wiring dimension
$\leq 100$	$0.3 \text{ mm}^2 \times 2$
$100 < x \leq 200$	$0.5 \text{ mm}^2 \times 2$
$200 < x \leq 300$	$0.75 \text{ mm}^2 \times 2$
$300 < x \leq 400$	$1.25 \times 2 \text{ mm}^2 \times 2$
$400 < x \leq 500$	$2 \times 2 \text{ mm}^2 \times 2$

## Installation condition

Don't install in the place where it is easy to produce noise.

It will be unavailable if it is installed near to the computer, auto-door, elevator, or other equipments what can produce noise.

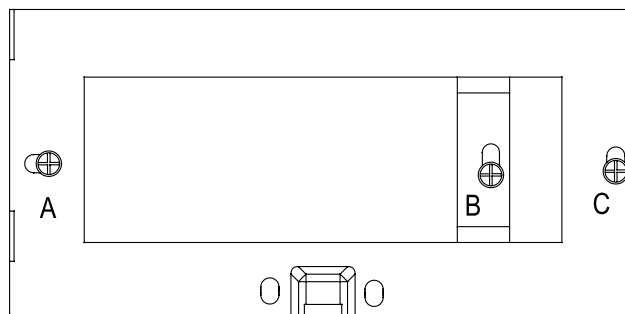
Don't install in the place where it is wet or shake violent.

It will cause failure if you install in the place where is very wet or shake violent.

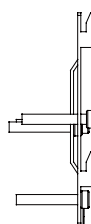
Don't install in the place where it is by direct sunlight or near to the heat.

It will cause failure if you install in the place by direct sunlight or near to the heat.

First, fix the rack on the cassette on the wall. Use A and B two holes if it is 120 cassette, use A and C two holes if it is 86 cassette.

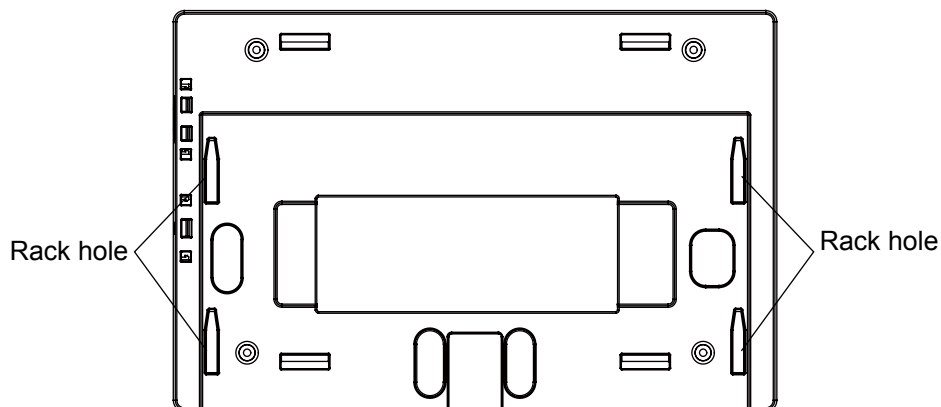


There are two pothooks on each side of the rack. There are four recesses corresponding with the pothooks on the back of the central controller.

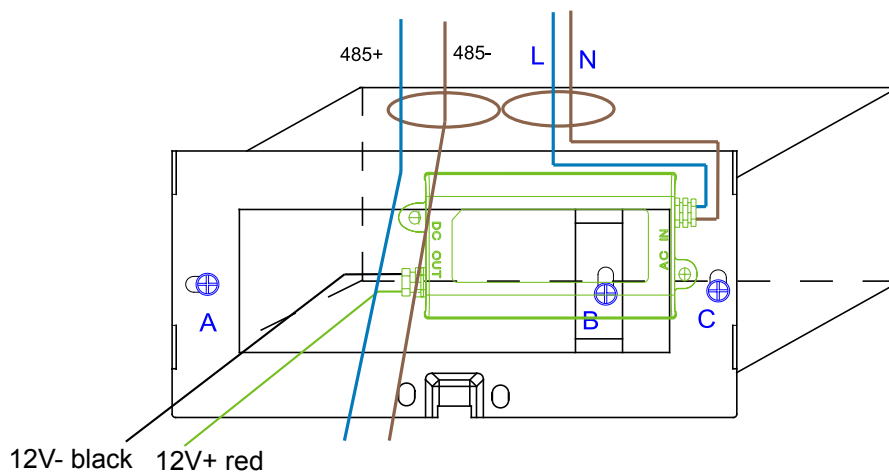


Installation diagram of the side of the rack

• Installation

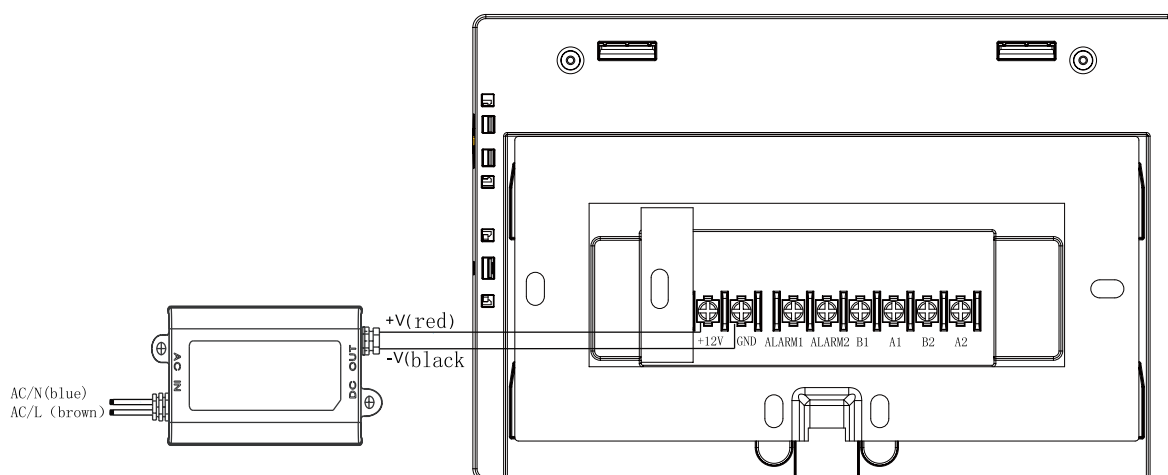


The installation of power adapter



Put the power adapter into the cassette and fix the rack. Put the line of secondary power adapter and the 485 line of converter board out of the rack, and set on the central controller. Then fix the central controller on the rack.

Wiring between power adapter and central controller



After connection, put the central controller on the rack



Aim the central controller recesses at pothook, and fix from top to bottom. Then the installation is complete.

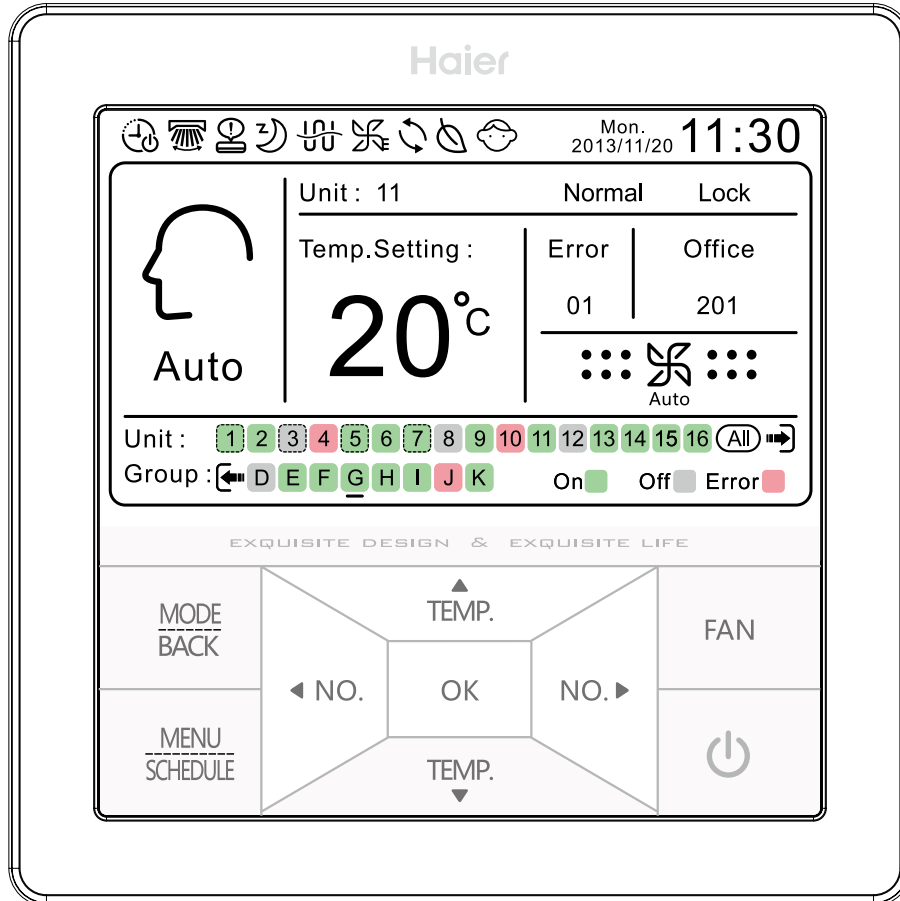
## 4.2 YCZ-G001



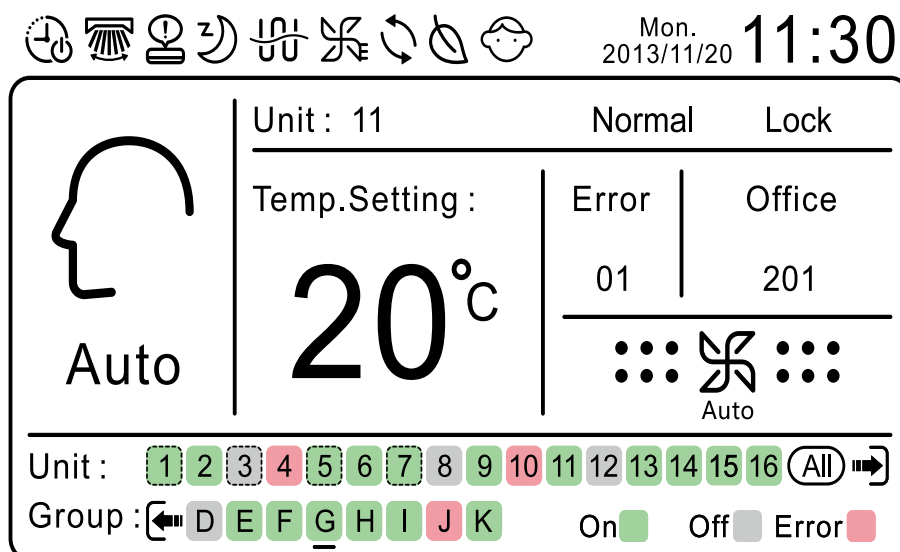
MRV	LCAC			
	Smart Power	Super Match	R410A ON/OFF	R22 ON/OFF
√	√	√	√	√

- Individual control, Group control & Central control (Max 32 indoor units)
- Large touch key
- Weekly timer
- Unit name & Group name free setting. Four background available (mall, hotel, office, home)
- Error display
- \* **Must be used in combination with an HA-M\*1 for each MRV system (Max. 8 sets)**

## Appearance












## Main interface display






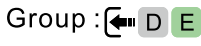
## Key descriptions

<p><b>MODE BACK</b></p>	<p>Mode/ESC key. Press this key for mode shift in the main interface and press this key to back to upper interface in other interfaces.</p>
<p><b>MENU SCHEDULE</b></p>	<p>Menu key. Press this key when in main interface to enter menu interface. The SCHEDULE below this key is for indication of valid of weekly timer setting.</p>
<p>▲ TEMP. TEMP. ▼</p>	<p>Adjustment key. It is for the temp. adjustment in the main interface. When ECO function is not set, the adjustment range is 16~30°C, 1°C per time. When ECO function is set, the adjustment range is limited as the setting. The adjustment key is for cursor position adjustment when it is not in the main interface.</p>
<p>◀ NO. NO. ▶</p>	<p>Unit No. Adjustment Key. It is used for adjustment of unit or group unit No. it functions as unit or group unit adjustment key in the main and unit &amp; group selection interface, the circulation being: unit→group→all→unit. Press this key for 3 seconds, it will accelerate the frequency as 2 times/s. It functions as cursor adjustment key in other interfaces.</p>
<p>OK</p>	<p>OK key</p>
<p>FAN</p>	<p>Fan key. Press the key to adjust fan speed. The circulation is : : 𠄎 : (Low)→ :: 𠄎 :: (Middle)→ ::: 𠄎 ::: (High)→ ::: 𠄎 :: (Auto)→ : 𠄎 : (Low) Auto Fan circulates as: : 𠄎 : → :: 𠄎 :: → ::: 𠄎 ::: → : 𠄎 : <small>Auto      Auto      Auto      Auto</small></p>
<p>⏻</p>	<p>ON/OFF key. In the main interface, short pressing of this key is for changing of ON/OFF state of the unit or group (smallest unit) unit that cursor stays. For example: if the smallest unit in the group is in ON state, after short pressing, all units in this group will change to OFF state. After pressing the ON/OFF key for 5s, if the unit or smallest unit of a group that the cursor stays is in ON state, all online units and groups will change to OFF, and vice versa. For example: if the smallest unit in the group that cursor currently stays is in OFF state, after pressing of ON/OFF key for 5 seconds, all units and groups online will change to ON state.</p>

## Main interface icon descriptions

	Weekly timer. When weekly timer function is set for the units or groups online, it will show on the main interface.
	Swing (reserved)
	Error. When there is malfunction happens to units or smallest unit of groups online, it will show on the main interface.
	Sleep (reserved)
	Electrical heating (reserved)
	Turbo (reserved)
	Heat reclaim (reserved)
	Health (reserved)
	Child lock

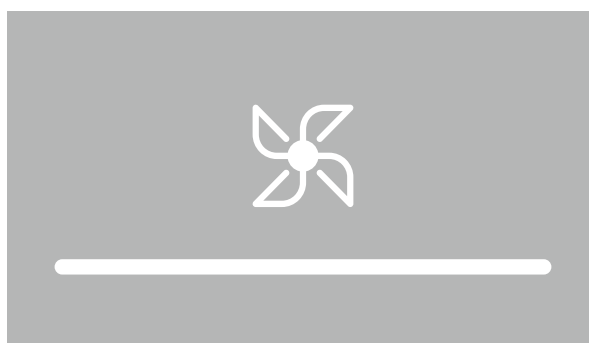
Mon. 2013/11/20	<b>11:30</b>	Date (YY/MM/DD), time, week displaying area.
 Auto	Mode of unit or smallest unit of group that cursor currently stays.	
Unit : 11	Unit or group that cursor currently stays.	
Filter	Filter (reserved)	
Normal/HRV	To display the unit or smallest unit of group that cursor currently stays is normal indoor or heat reclaim ventilation, which is only valid for part of models.	
LIFO / Central / Lock	To display the unit or group the cursor currently stays is LIFO, central or lock state.	
Temp.Setting : <b>20°C</b>	To display the set temperature of unit or smallest unit of group that cursor stays, or to display the ambient temperature by basic setting.	

<p>Error 01</p>	<p>To display ON/OFF state or error of unit or group that cursor stays, error displays priority.</p>
<p>Office 201</p>	<p>Naming display. To display the name of the unit or group that the cursor stays. if the length exceeds display area, the exceeding part will show as •••. If no naming, it will display unit/group as Unit1/ Group A.</p>
	<p>Fan speed display.</p>
<p>Unit : </p>	<p>Online unit display and gridline indicating HRV. When cursor moves to ALL, it means all online units selected is valid for simultaneous control. If units online are more than 16, move cursor to ALL and then press RIGHT key to enter the next page. After entering the next page, the arrow is on the left side of online units, press LEFT key to arrow to enter previous page. Note: HRV display can only be seen when HRV unit is online.</p>
<p>Group : </p>	<p>Group display. When units included are HRV, they will be shown in gridline and page turning is the same as unit operation. Note: when HRV is included in the group and if linkage function is set, it will follow the rule if only one normal indoor is set ON, HRV will also be ON. If all normal indoor units in group is set OFF, HRV will be OFF state.</p>

## • Operation

### Initialization

After powering on reset, the interface will display:





After progress bar is finished, the initialization will be completed and enter main interface, the ON/OFF state of online units and groups will be shown on the unit and group area.

**Function instructions**

1. Mode circulation:

When pressing MODE key in the main interface, the circulation of normal indoor units is: → → → → → and HRV circulation is → → → .

Note: when cursor is in the group area, the interface will show the smallest unit state of group, and it will adjust the smallest unit mode in mode adjustment state. There is no interface between HRV and normal indoor units in the group.

2. Full control function:

When cursor flashes under ALL which is under online unit display area. Press OK key to enter full control interface.

(1) When normal indoor units and HRV online are controlled together, it will show smallest indoor unit state after entering full control function. If the smallest indoor unit is normal indoor, the full control interface will show as follow.

**Full Control**

On/Off	<input checked="" type="radio"/> On	<input type="radio"/> Off
Control Mode	<input checked="" type="radio"/> Central	<input type="radio"/> Lock <input type="radio"/> LIFO
Mode	<input type="radio"/> Auto	<input type="radio"/> Cool <input checked="" type="radio"/> Heat <input type="radio"/> Fan <input type="radio"/> Dry
Fan	<input type="radio"/> Auto	<input type="radio"/> Low <input checked="" type="radio"/> Middle <input type="radio"/> High
Temp.Setting	▲ 28°C ▼	

(2) If the smallest indoor unit is HRV, it will show smallest HRV state after entering full control interface.

**Full Control**

On/Off	<input checked="" type="radio"/> On	<input type="radio"/> Off
Control Mode	<input checked="" type="radio"/> Central	<input type="radio"/> Lock <input type="radio"/> LIFO
Mode	<input type="radio"/> Auto	<input checked="" type="radio"/> Recovery <input type="radio"/> By-pass
Fan	<input type="radio"/> Low air exchange	<input type="radio"/> Low
	<input type="radio"/> High air exchange	<input type="radio"/> High

After entering the interface, press UP/DOWN/LEFT/RIGHT key to move the cursor and press OK key to confirm. Note: HRV is only valid for part of models.

### 3. Unit control function:

When cursor is flashing on any online unit in the main interface, press OK to enter control interface of this unit. Press UP/DOWN/LEFT/RIGHT key to move the cursor and press OK key to confirm.

## Unit Control

Unit 1	Name : Office 102 The region : D	Type : Normal Model Ambient Temp.: 23°C
10°C Heating	<input checked="" type="radio"/> On	<input type="radio"/> Off
Control Mode	<input checked="" type="radio"/> Central	<input type="radio"/> Lock <input type="radio"/> LIFO
Filter	<input checked="" type="radio"/> On	<input type="radio"/> Off
Breeze/Super	<input checked="" type="radio"/> On	<input type="radio"/> Off

Note: the functions in grey are reserved functions.

### 4. Group control function:

When cursor is flashing on any online group in the main interface, press OK to enter control interface of this group and press UP/DOWN/LEFT/RIGHT key to move the cursor and press OK key to confirm.

## Group Control













Group A	Name : Office 102
Unit Included :	11 12 13 14 15 16 17 18
10°C Heating	<input checked="" type="radio"/> On <input type="radio"/> Off
Control Mode	<input checked="" type="radio"/> Central <input type="radio"/> Lock <input type="radio"/> LIFO
Breeze/Super	<input checked="" type="radio"/> On <input type="radio"/> Off
HRV Linkage	<input checked="" type="radio"/> On <input type="radio"/> Off

Note: the functions in grey are reserved functions.

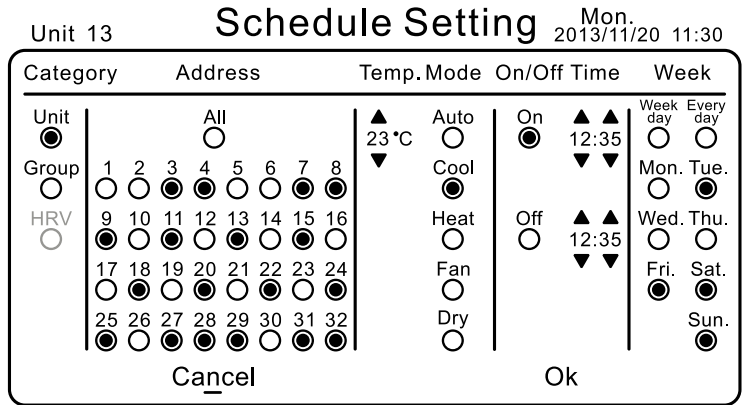
### 5. Weekly timer:

Press MENU key in the main interface to enter menu interface.

## Menu

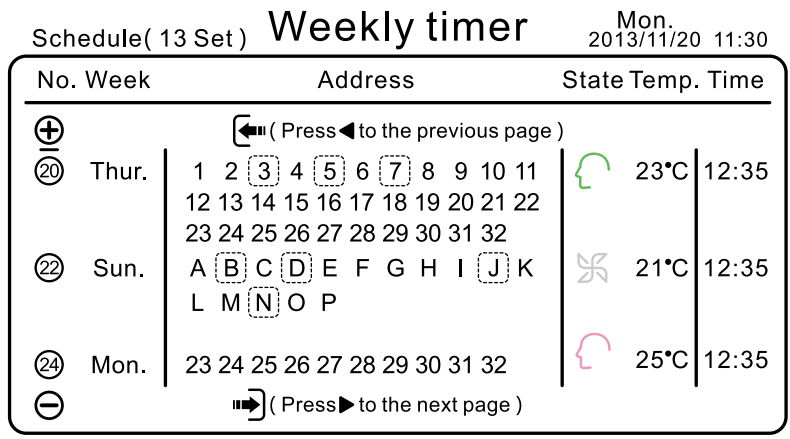
					
Schedule	Unit/Group Setting	Setting	ECO	Error Code	Service
					
Time	Swing	Basic Setting	Additional Function	Details	Running Time

(1) When Schedule icon is flashing, press OK key to enter weekly timer configuration interface. The cursor flashing on ⊕, press OK key to enter the following set interface.



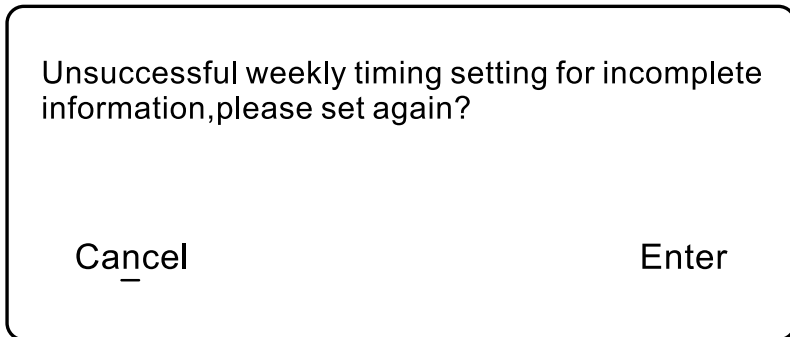
(figure 1)

Select according to requirement the Category, Address, Temperature, Mode, ON/OFF, Time, Week, and after finishing setting, move cursor to Ok, and press OK key to complete the weekly timer setting. When adjusting temperature and time, press OK key and cursor will statically display, and then press UP/DOWN key to adjust value. After finishing adjustment, press LEFT/RIGHT key to move cursor to other position or press OK key again to resume flashing of cursor. The interface display is as follows (it can be set by setting select as week index or unit/group index, the default is week index.)



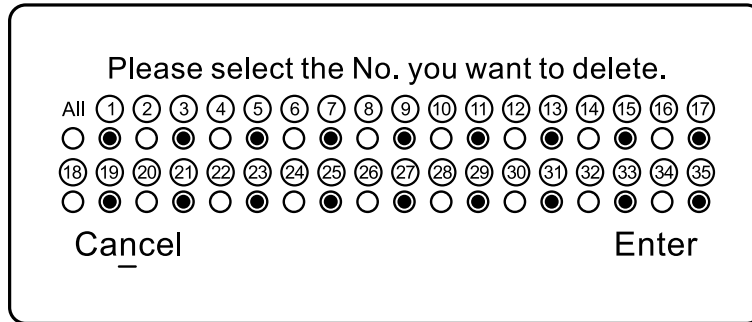
(figure 2)

If configuration information is not set completely, press OK key at the ok that cursor stays, it will prompt the following window:

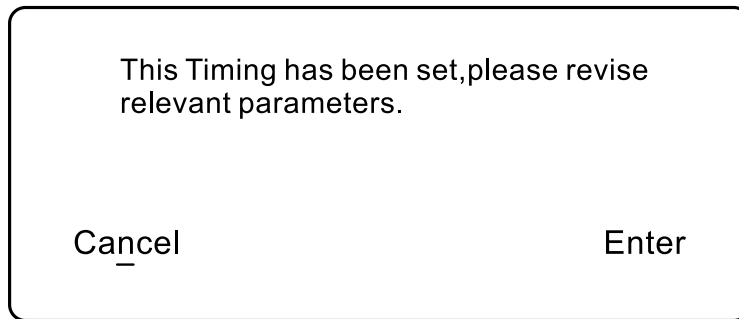


The cursor stays default at Cancel, if move cursor to Enter and press OK key, it will return to figure 1 to complete the unfinished information. If press OK key when cursor stays at Cancel, the weekly setting will be cancelled and return to figure 2.

(2) When moving cursor to ⊖ and then press OK key to enter the following interface, select the weekly timer that needs to be cancelled, when cursor moves to Enter, press OK key to cancel the weekly timer setting.



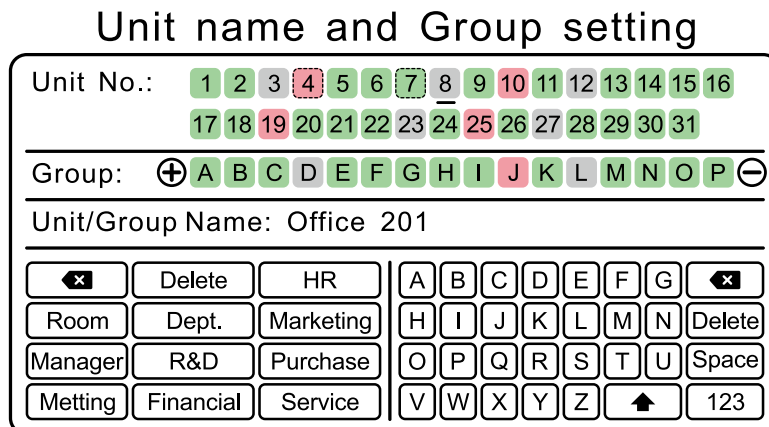
- (3) Move cursor to any set weekly timer No. and then press OK key to modify the weekly timer information.
- (4) When there is repeated or conflicted weekly timer setting between new and old weekly timer setting, press OK key and it will show pop window and it can be modified and confirmed again, as figure 3.



(figure 3)

### 6. Unit/Group setting:

In menu interface, press UP/DOWN/LEFT/RIGHT key for adjustment. When unit/group setting icon flashes, press OK key to enter and cursor will flash at the smallest unit No.. Press OK key, the cursor will stop flashing and jump to first key of keyboard, inverse displaying. Press UP/DOWN/LEFT/RIGHT key to move cursor and press OK key to select key of keyboard and confirm.



Press UP/DOWN/LEFT/RIGHT key to move cursor to the included area ⊕ and press OK key to enter group setting interface (the group is automatically named as A to Z in sequence.) as figure 1. The cursor will be at the smallest selectable unit, press UP/DOWN/LEFT/RIGHT key to move cursor and press OK key to show pop window as figure 2. If part of online unit is included in the current group, press UP/DOWN/LEFT/RIGHT key to move cursor to the unit that needs to be cancelled, and then press OK key to show pop window as figure 3. Press UP/DOWN/LEFT/RIGHT key to move cursor to the included area ⊖ and press OK key to show pop window as figure 4, Press UP/DOWN/LEFT/RIGHT key to move cursor to the group that needs to be deleted, and then press OK key to confirm.

### Group A

Contained Unit : 1 2 3 4 5 6 7 8 9 10 11 12  
 (Deletable Unit)

---

Optional Unit : 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28  
 Unit : 29 30 31

---

Name : Group A

✕	Delete	HR	A	B	C	D	E	F	G	✕
Room	Dept.	Marketing	H	I	J	K	L	M	N	Delete
Manager	R&D	Purchase	O	P	Q	R	S	T	U	Space
Meeting	Financial	Service	V	W	X	Y	Z	↑	123	

(figure 1)

Do you want to add Unit 10 t

Cancel

(figure 2)

Do you want to delete Unit 2 fr

Cancel

(figure 3)


Please select the Group/Groups you want to delete.

A B C D E F G H I J K L M N O P

○ ● ○ ● ○ ● ○ ● ○ ● ○ ● ○ ● ○ ●

Cancel Enter

(figure 4)

If it is needed to name the current group, press UP/DOWN/LEFT/RIGHT key to move to keyboard. When first entering the keyboard, cursor will be at , press UP/DOWN/LEFT/RIGHT key to adjust and press OK key to confirm.

**7. Local setting:**

In the Menu interface, press UP/DOWN/LEFT/RIGHT key to adjust, and when setting icon flashes, press OK key to enter figure below. Press UP/DOWN/LEFT/RIGHT key to move cursor and press OK key to confirm. Default Screen Timeout is 15s, default Brightness is 60%, default Schedule Index is Week and default Place is set as Home.

## Setting

Screen Timeout	<input type="radio"/> 15 s	<input type="radio"/> 30 s	<input checked="" type="radio"/> 1 min	<input type="radio"/> 3 mins	<input type="radio"/> Cancel
Brightness	<input type="radio"/> 30 %	<input checked="" type="radio"/> 50 %	<input type="radio"/> 60 %	<input type="radio"/> 80 %	
Schedule Index	<input checked="" type="radio"/> Week		<input type="radio"/> Unit/Group		
Place	<input type="radio"/> Mall	<input type="radio"/> Office			
	<input type="radio"/> Hotel	<input checked="" type="radio"/> Home			

### 8. ECO function:

- (1) In menu interface, press UP/DOWN/LEFT/RIGHT key to adjust, when ECO icon flashes, press OK key to enter and the initial password is 841226. The interface will show as figure below after entering, and press UP/DOWN key to move cursor and LEFT/RIGHT key to adjust unit/group, then press OK key to confirm.
- (2) ECO function is default set as OFF. The default maximum temperature is 26°C in heating and the default minimum temperature is 23°C in cooling/dry mode. It is default set as no exceeding of limit.
- (3) Temperature, time value adjustment: when cursor flashes at the value, press OK key to stop the flashing and press UP/DOWN key to adjust the temperature or time value then press OK key again to confirm and resume the flashing of cursor, pressing UP/DOWN key to move cursor.
- (4) After setting ECO function to any group, all normal indoor units of the group are limited of set temperature and HRV remains the previous state (HRV is only valid for part of models).

## ECO

Setting	<input checked="" type="radio"/> On		<input type="radio"/> Off	
Temp.Range	Heat mode	▲	Cool/Dry	▲
	highest temp. limit	28 ▼	mode lowest temp. limit	23 ▼
Type	<input checked="" type="radio"/> No overrun	<input type="radio"/> 12 hrs	<input type="radio"/> 30 mins	permitted
◀ ( Unit 22 ) ▶				
◀▶ Select Unit/Group   ▲▼ Move cursor,press the Enter key to adjust				

### 9. Error code

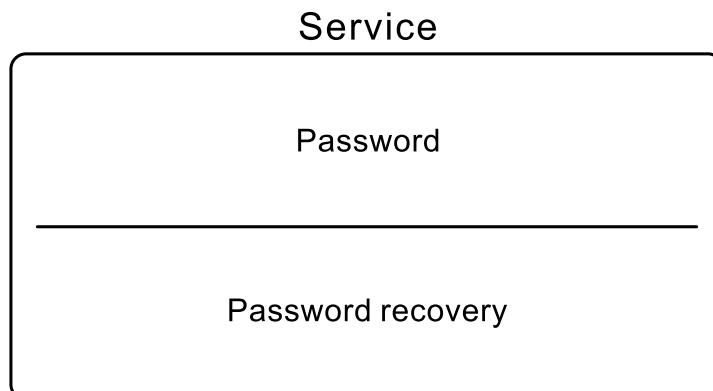
In menu interface, press UP/DOWN/LEFT/RIGHT key to adjust. When error code icon flashes, press OK key to enter as figure below.  
The current error can only display 1 piece while historic error can display 10 pieces. Press UP/DOWN key to turn page for checking and LEFT/RIGHT key to adjust unit/group to display current online unit or smallest unit in group current and historic error.

## Error Code

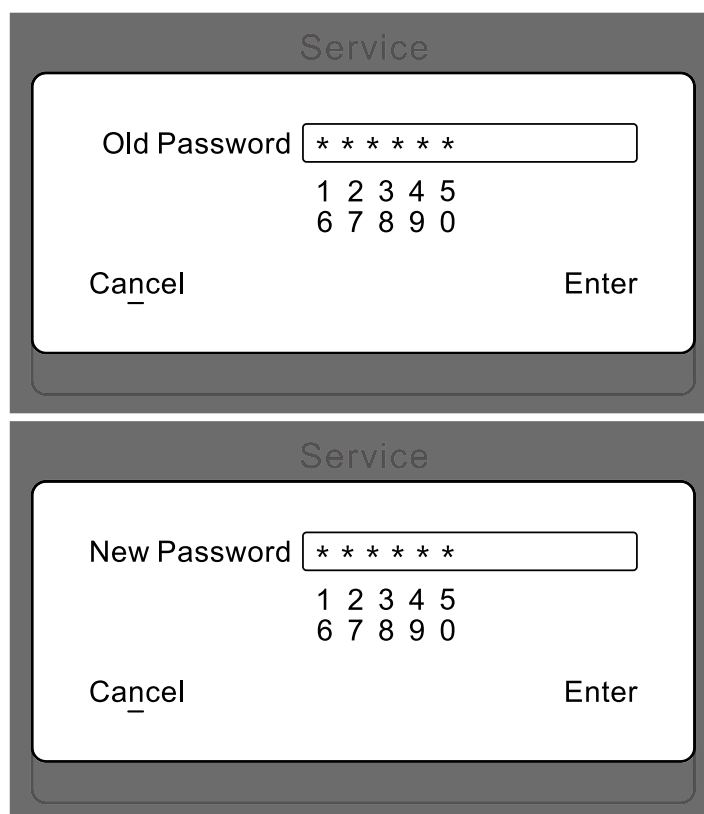
Current Error	Error Code: 013	20/12/2013	11:20
Error History	▲ Error Code: 013	20/12/2013	11:20
	Error Code: 013	20/12/2013	11:20
	Error Code: 013	20/12/2013	11:20
	▼ Error Code: 013	20/12/2013	11:20
◀ ( Unit 1 ) ▶			
◀▶ Select Unit/Group   ▲▼ Move cursor to inquiry error history			

### 10. Service setting:

In menu interface, press UP/DOWN/RIGHT/LEFT key to move the cursor to service setting icon and then press OK key to enter as figure below.



Press UP/DOWN key to select password and password recovery. When cursor flashes in the password position, press Enter key to confirm and enter password interface.



Press UP/DOWN/LEFT/RIGHT key to change between number and Enter/Cancel. When cursor flashes on the number position, press OK to enter corresponding number. After entering 6 digits password, press OK key to confirm or move cursor to enter or cancel position for confirm or cancel.

### 11. Time setting:

In menu interface, press UP/DOWN/LEFT/RIGHT key to adjust. When clock icon flashes, press OK key to enter as figure below, and press UP/DOWN/LEFT/RIGHT key to move cursor, when cursor flashes, press OK to confirm and the cursor will stop flashing. Press UP/DOWN key to adjust the value and press OK key again to confirm and the cursor will resume flashing and Press UP/DOWN/LEFT/RIGHT key to move cursor. After finishing adjusting value, press directly of LEFT/RIGHT key to move the cursor to other position.

## Time

Date	▲ 2013 ▼	Year	▲ 12 ▼	Month	▲ 22 ▼	Day
<hr/>						
Time	▲ 15 ▼	Hour	▲ 25 ▼	Minute	▲ Mon. ▼	

12. Swing setting is reserved function.

13. Basic setting function:

(1) In menu interface, press UP/DOWN/LEFT/RIGHT key to adjust, when basic setting icon flashes, press OK key and input initial password 841226 to enter the interface as figure 1. Press UP/DOWN/LEFT/RIGHT key to move cursor and press OK to confirm.

(2) Default model setting is self-adaption, default language is English and ambient temperature display is OFF.

(3) After set ambient temperature display as ON, the interface display will change from “temperature setting” to “ambient temperature display”. The ambient value is the unit or smallest unit of group that cursor stays. When pressing UP/DOWN key to adjust set temperature, the main interface will first statically display temp. setting string and set temperature value, and then display statically ambient temperature value and ambient temperature display string after 3s. When pressing LEFT/RIGHT key to shift online unit or group and pressing MODE key to shift mode. It will first statically display temp. setting string and set temperature value, and then display statically ambient temperature value and ambient temperature display string after 3s.

## Basic Setting

Model	<input type="radio"/> MRV	<input checked="" type="radio"/> Unitary/Multi	<input type="radio"/> Self-adaption
<hr/>			
Language	<input type="radio"/> Chinese	<input checked="" type="radio"/> English	<input type="radio"/> Italian
<hr/>			
Ambient Temp.Display	<input checked="" type="radio"/> On	<input type="radio"/> Off	

(figure 1)

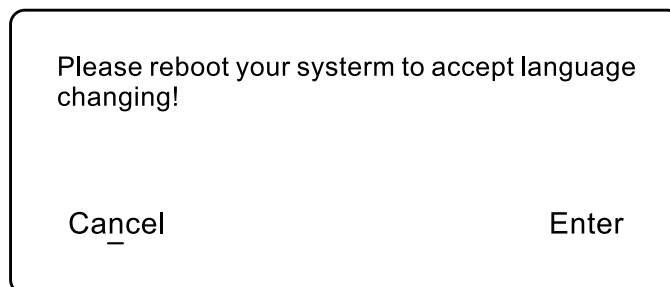
(4) After changing model selection, it will show pop window of needing reboot as figure 2

Please reboot your system to accept model changing!	
Cancel	Enter

(figure 2)



(5) After changing language, it will show pop window of needing reboot as figure 3.

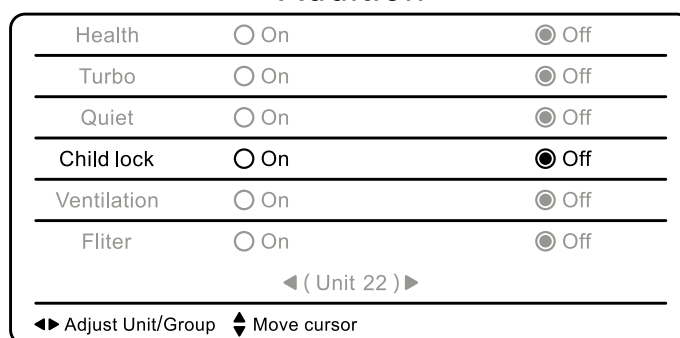


(figure 3)

#### 14. Additional function:

In menu interface, press UP/DOWN/LEFT/RIGHT key to adjust. When additional function icon flashes, press OK key to enter as figure below. Press UP/DOWN key to move the cursor and the functions in grey are reserved functions. After setting child lock function, all keys are invalid and it will return to main interface when setting. After setting child lock function, press together LEFT and RIGHT keys for 5s to cancel. The child lock function can be set by the above procedure if it is not set.

#### Addition

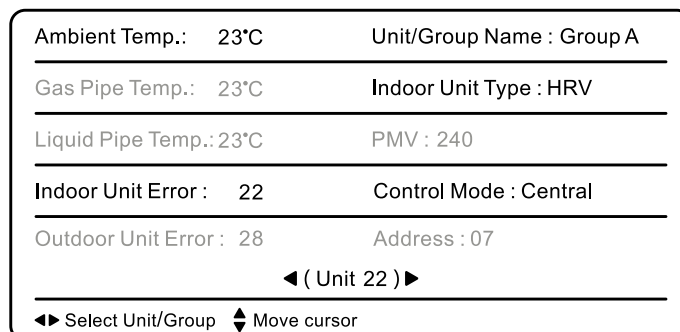


Note: the functions in grey are reserved functions.

#### 15. Detailed information:

In menu interface, press UP/DOWN/LEFT/RIGHT key to adjust. When details icon flashes, press OK key to enter as figure below. Press LEFT / RIGHT key to adjust unit/group and check detailed information of online unit or smallest unit of group.

#### Details



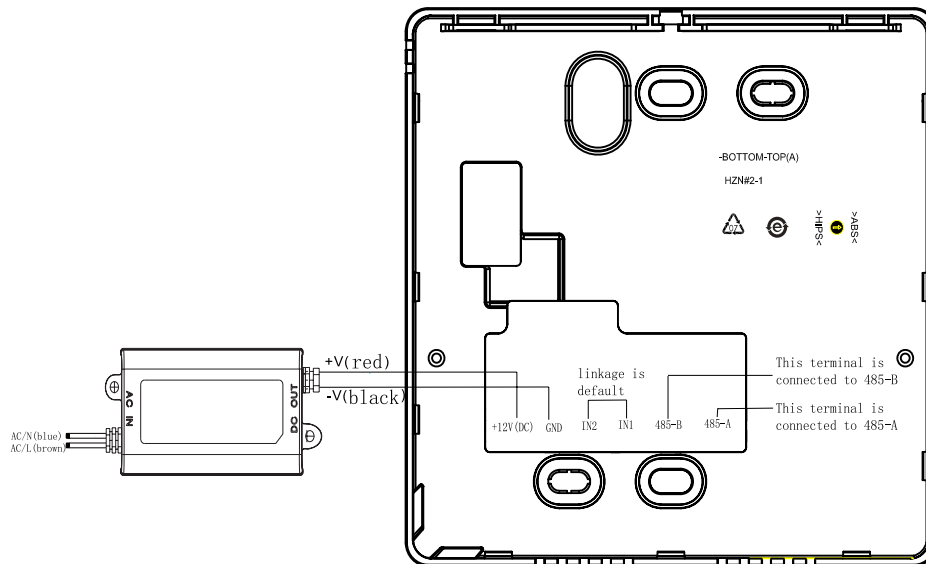
#### 16. Running time:

In menu interface, press UP/DOWN/LEFT/RIGHT key to adjust. When running time icon flashes, press OK key to enter as figure below. When cursor is flashing at Clear, press OK key to clear continuous running time/total running time and recalculate the time.

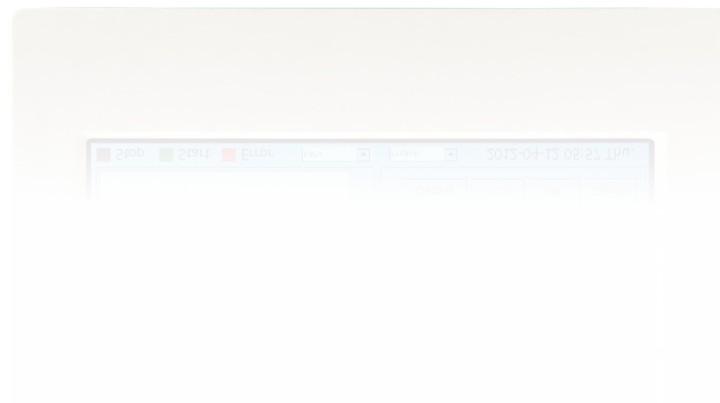
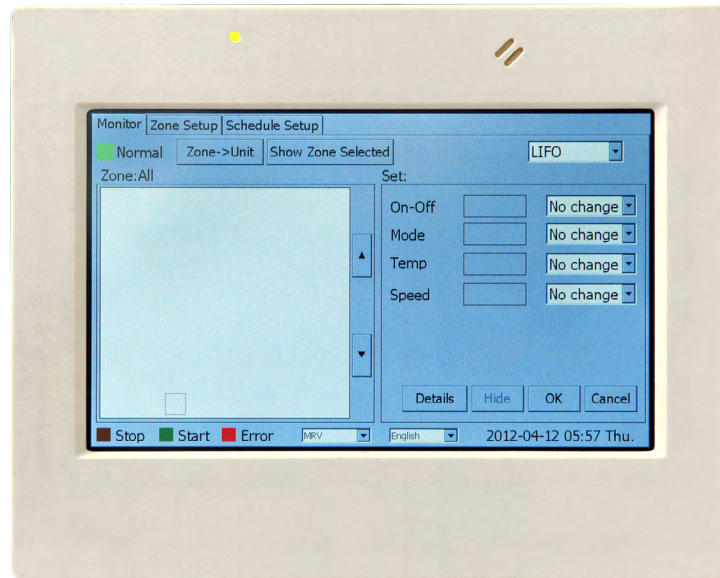
## Running Time

Unit/Group Name :	Office 201	
<hr/>		
Continuous Running Time :	0014 : 22 : 53	Clear
<hr/>		
Total Running Time :	0023 : 22 : 15	Clear
<hr/>		
◀ ( Unit 22 ) ▶		
<hr/>		
◀▶ Select Unit/Group    ⬆ Move cursor		

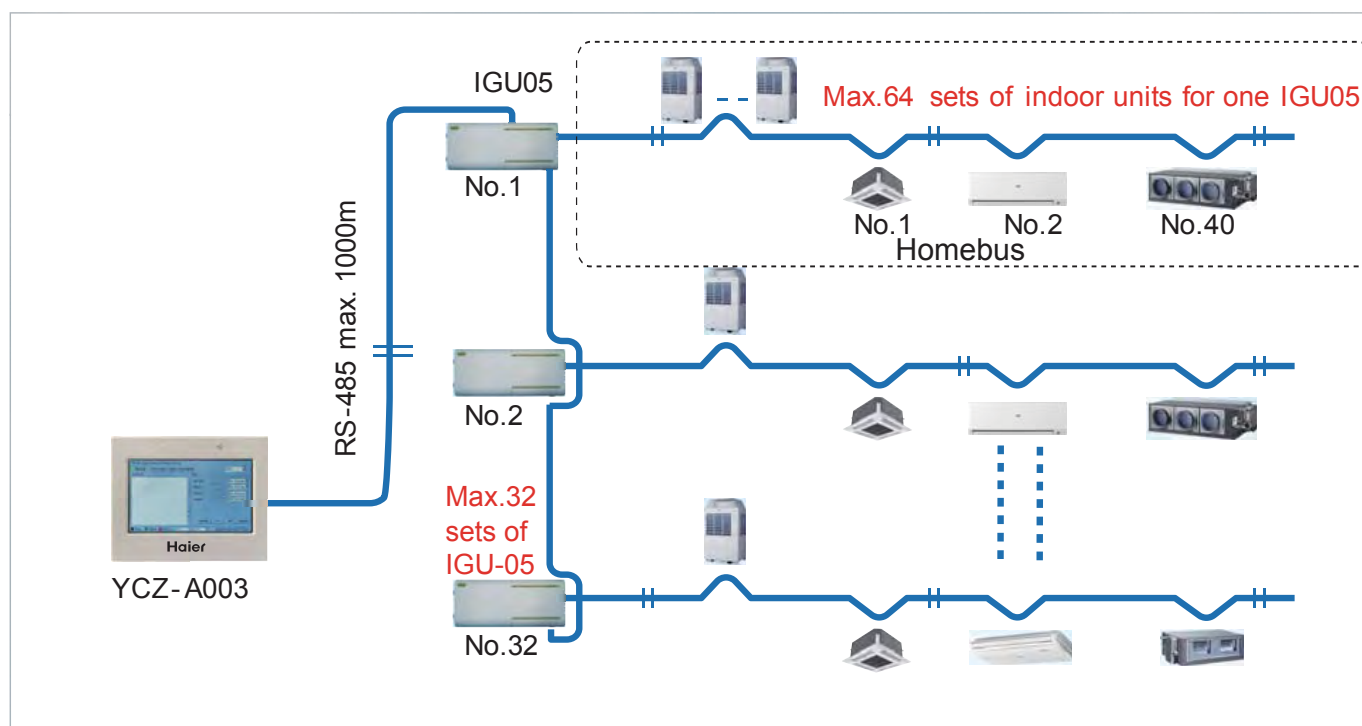
### • Central Controller Wiring Connection



## 4.3 YCZ-A003



## 1. system



## 2. Brief

Central controller YCZ-A003 Mainly design for MRV series system.

Can control and monitor the indoor units condition, maximum can control 128 groups, each group can maximum connect to 16 indoor units. All the controls, such as individual control, zone control, time setting, timer setting etc., can be realized by touch screen.

## 3. Main functions

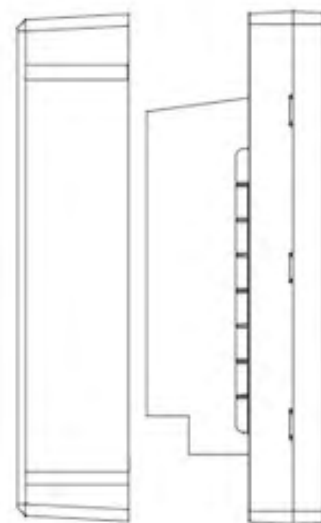
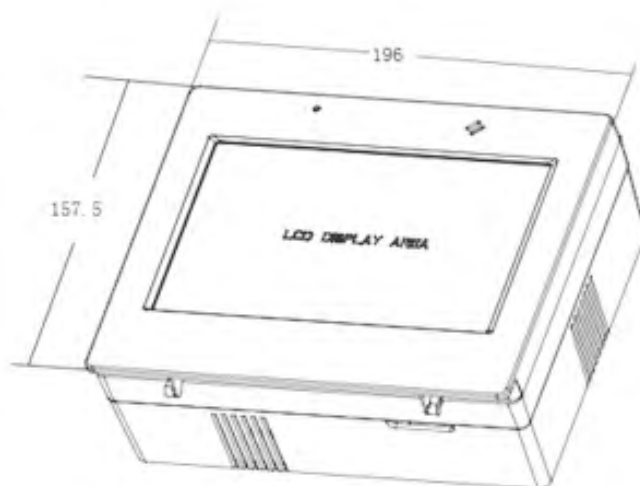
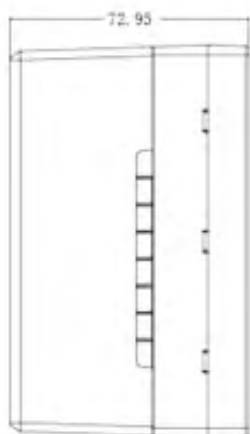
1. Maximum can monitor 128 groups\* indoor unit operation mode, airflow speed, temp., setting, ON/OFF, error code display etc. condition.
2. Can set mode, airflow speed, temp. etc. for individual /zone /All.
3. Can check indoor unit real temp., pipe temp. etc. parameters.
4. Can set LIFO (Last enter have high priority ),central control, lock etc. 3 types of operation modes.
5. Can monitor the indoor units malfunction and save the error code for future checking.
6. Weekly timer setting ;
7. Can set random units groups to one zone, maximum can set 128 groups to one zone, after set zone, each indoor unit of this zone can have same operation status.(default setting: one group is one zone).
8. With a third-part port (modbus RTU)
9. With a fire port

#### 4. Specification

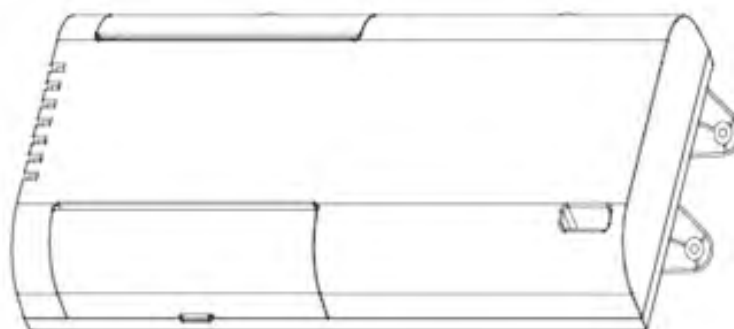
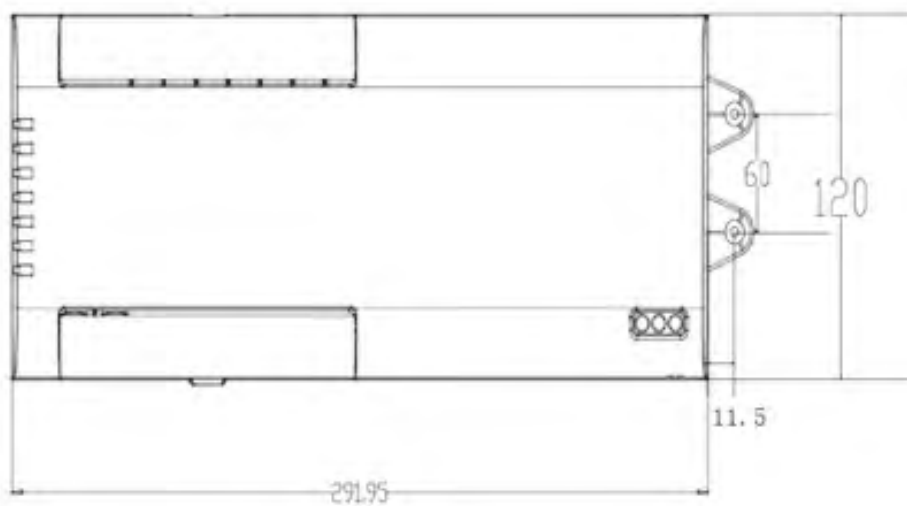
Model		YCZ-A003
Dimension (mm)		196*157.5*72.95
Net weight		2kg
Power supply		220V AC 50Hz
Max. connection quantity of gateways		32
Max. connection quantity of indoor units		128
Operating temperature range		0-40°C
Gateway	Model	IGU05
	Dimension (mm)	291.95*120*42.5
	Net weight	0.8kg
	Power supply	220V AC 50Hz
	Function	Transform homebus protocol to 485 protocol
	Operating temperature range	-20~53°C
	Max. connection quantity of indoor units	64
Max. communication length		HomeBUS: 300m RS-485: 1000m

## 5. Dimension

### YCZ-A003



### IGU-05



## 6. Installation

### Installation position selection

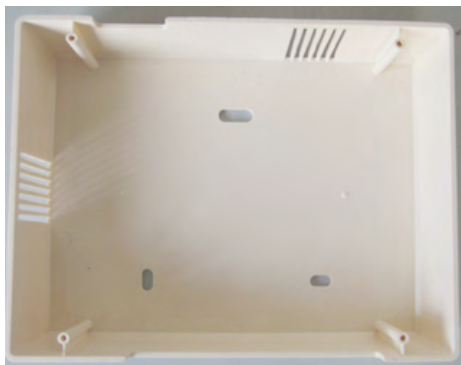
1. Don't install the position near to the noise atmosphere,  
Such as Computer, Elevator, lift or other equipment to avoid malfunction happens.
2. Don't install the controller in high humidity or heavy vibration position
3. No sun shine direct access or close to thermal resources, try to avoid the malfunction.

### Installation

Strong commended that YCZ-A003 and IGU05 install the unattached power switch, it is very convenient for service.

Easy installation, allows for installation the unit either directly to the wall surface or use the back cover hole in the wall.

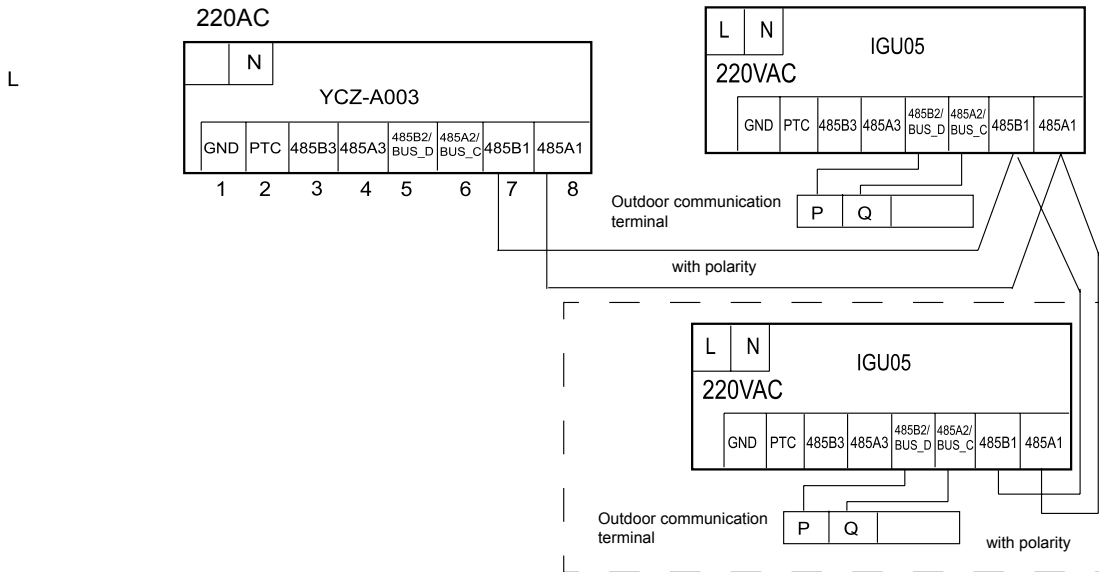
First fix the back cover embed the wall or wall surface.



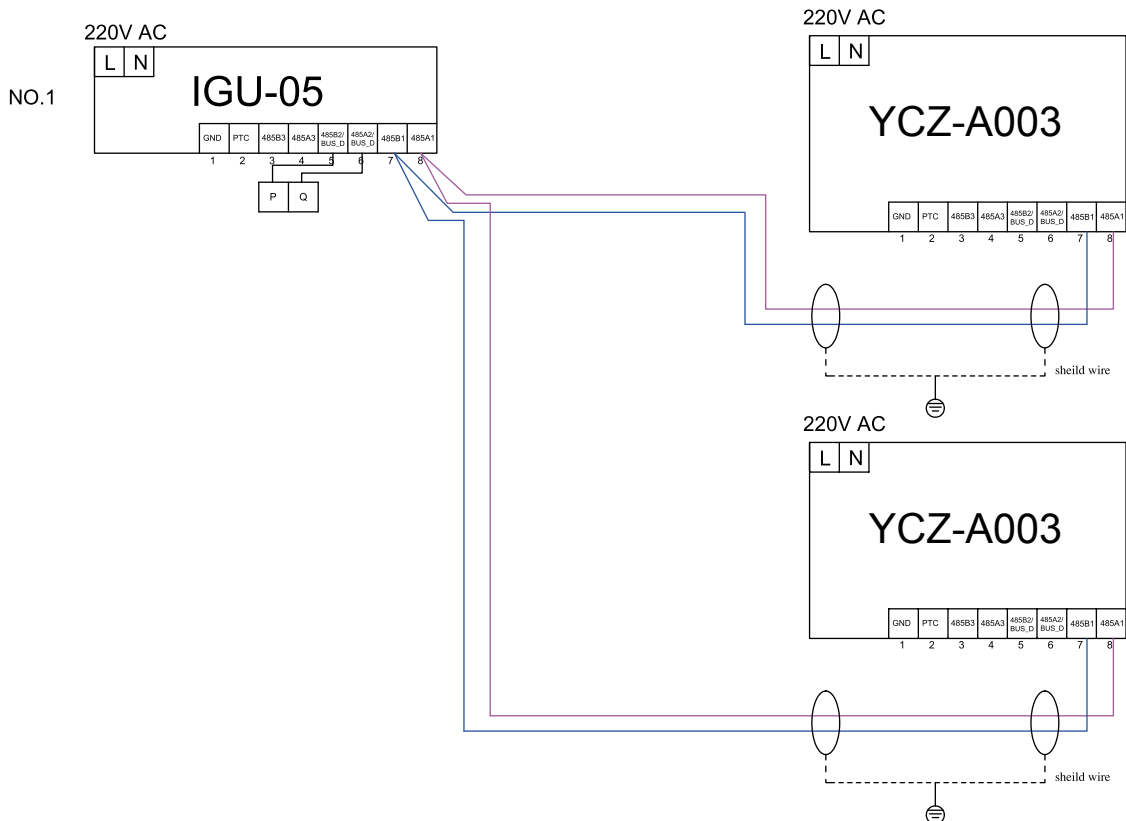
After connecting wirings, insert the central controller into the back cover, open the front cover, fix the central controller to the back cover by using 4 screws according to the above pictures shows, then cover the front cover.



## 7. Wiring connection



**Cautions:**  
Wrong connections will burn the PCB



1. We tested with only one IGU-05. Under this connection, nothing is required to set. You can test with more IGU-05 if you want.
2. Both of two YCZ-A003 can control the MRV indoor units. The state of indoor unit on one YCZ-A003 can be refreshed after you operate on the other YCZ-A003.



**Wiring standard**

The wire from connecting board to central controller and from master to slave controller should use twin-core shield wiring. The detailed size as follow sheet

Signal wire length	Wiring size
<100	0.3x2mm <sup>2</sup>
100<X<200	0.5x2mm <sup>2</sup>
200<X<300	0.75x2mm <sup>2</sup>
300<X<400	1.25x2mm <sup>2</sup>
400<X<1000	2x2mm <sup>2</sup>

And one end of the shield level must connect to the earth.

## 8. Dip switch setting

IGU-05 address setting method

OFF:1 ON:0

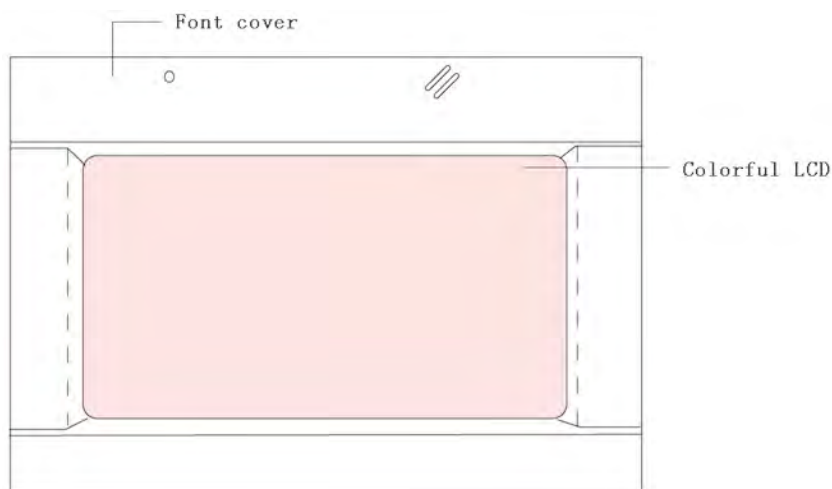
1	2	3	4	5	6	7	8	No.
--	--	--	0	0	0	0	0	1
--	--	--	0	0	0	0	1	2
--	--	--	0	0	0	1	0	3
--	--	--	0	0	0	1	1	4
--	--	--	0	0	1	0	0	5
--	--	--	0	0	1	0	1	6
--	--	--	0	0	1	1	0	7
--	--	--	0	0	1	1	1	8
--	--	--	0	1	0	0	0	9
--	--	--	0	1	0	0	1	10
--	--	--	0	1	0	1	0	11
--	--	--	0	1	0	1	1	12
--	--	--	0	1	1	0	0	13
--	--	--	0	1	1	0	1	14
--	--	--	0	1	1	1	0	15
--	--	--	0	1	1	1	1	16
--	--	--	1	0	0	0	0	17
--	--	--	1	0	0	0	1	18
--	--	--	1	0	0	1	0	19
--	--	--	1	0	0	1	1	20
--	--	--	1	0	1	0	0	21
--	--	--	1	0	1	0	1	22
--	--	--	1	0	1	1	0	23
--	--	--	1	0	1	1	1	24
--	--	--	1	1	0	0	0	25
--	--	--	1	1	0	0	1	26
--	--	--	1	1	0	1	0	27
--	--	--	1	1	0	1	1	28
--	--	--	1	1	1	0	0	29
--	--	--	1	1	1	0	1	30
--	--	--	1	1	1	1	0	31
--	--	--	1	1	1	1	1	32
--	--	--	--	--	--	--	--	Preserved
--	--	--	--	--	--	--	--	Preserved
--	--	--	--	--	--	--	--	Preserved

Central controller address switch:

1	2	3	4	5	6	7	8	No.
--	--	--	0	0	0	0	0	1
--	--	--	0	0	0	0	1	2
--	--	--	0	0	0	1	0	3
--	--	--	0	0	0	1	1	4
--	--	--	0	0	1	0	0	5
--	--	--	0	0	1	0	1	6
--	--	--	0	0	1	1	0	7
--	--	--	0	0	1	1	1	8
--	--	--	0	1	0	0	0	9
--	--	--	0	1	0	0	1	10
--	--	--	0	1	0	1	0	11
--	--	--	0	1	0	1	1	12
--	--	--	0	1	1	0	0	13
--	--	--	0	1	1	0	1	14
--	--	--	0	1	1	1	0	15
--	--	--	0	1	1	1	1	16
--	--	--	1	0	0	0	0	17
--	--	--	1	0	0	0	1	18
--	--	--	1	0	0	1	0	19
--	--	--	1	0	0	1	1	20
--	--	--	1	0	1	0	0	21
--	--	--	1	0	1	0	1	22
--	--	--	1	0	1	1	0	23
--	--	--	1	0	1	1	1	24
--	--	--	1	1	0	0	0	25
--	--	--	1	1	0	0	1	26
--	--	--	1	1	0	1	0	27
--	--	--	1	1	0	1	1	28
--	--	--	1	1	1	0	0	29
--	--	--	1	1	1	0	1	30
--	--	--	1	1	1	1	0	31
--	--	--	1	1	1	1	1	32
--	--	--	--	--	--	--	--	Preserved
--	--	--	--	--	--	--	--	Preserved
--	--	--	--	--	--	--	--	Preserved

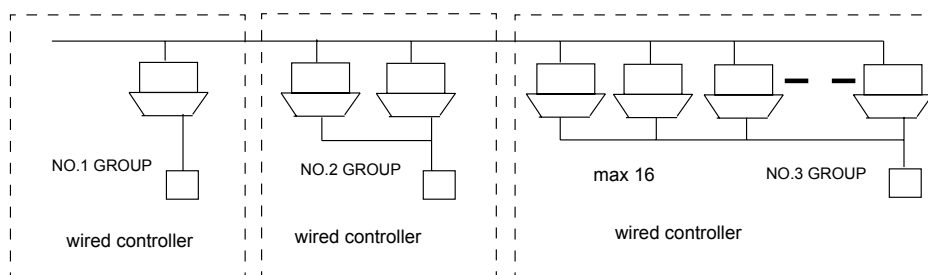
## 9. Part name and function explanation

### Font cover



### Colorful LCD

#### Group

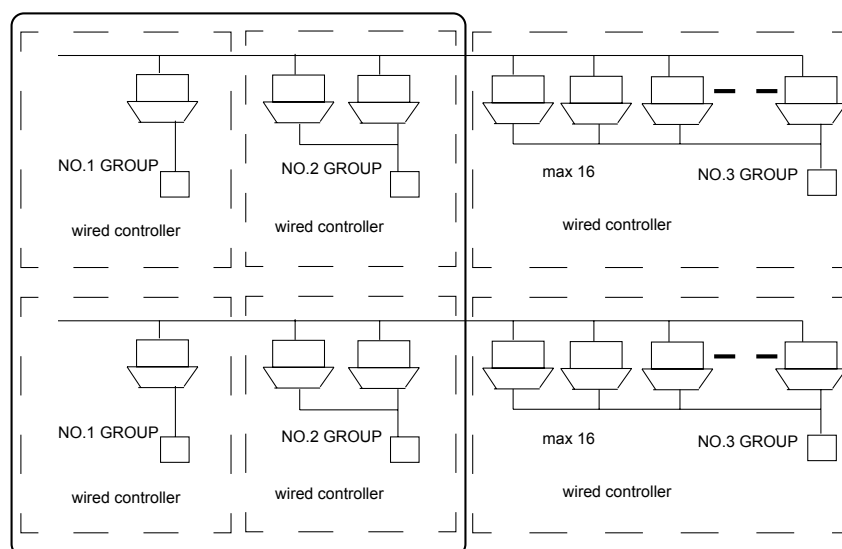


Use one wired controller controlled one or several sets(maximum 16) indoor unit as one unit, they use the same central control address, the Central controller think one unit.

Set one group only can use one mode control, can't control one set of the group individually.

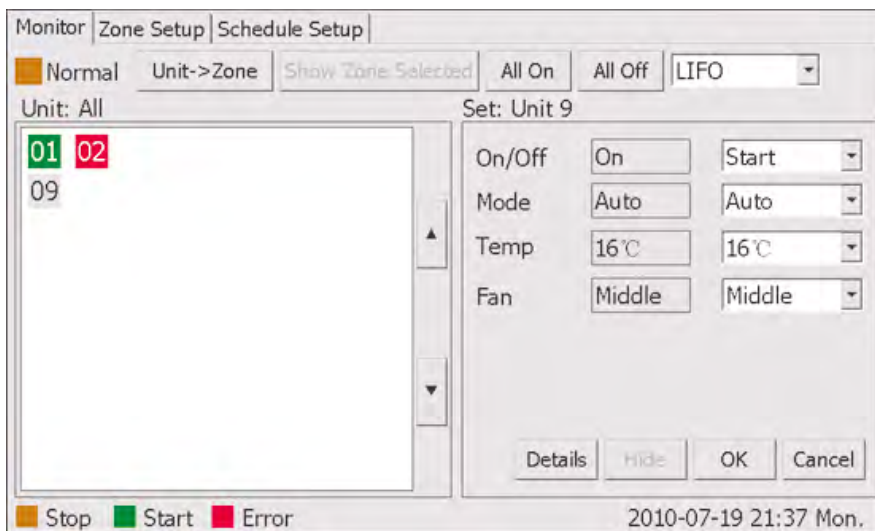
One group minimum has one set indoor unit, maximum 16 sets indoor units.

#### Zone



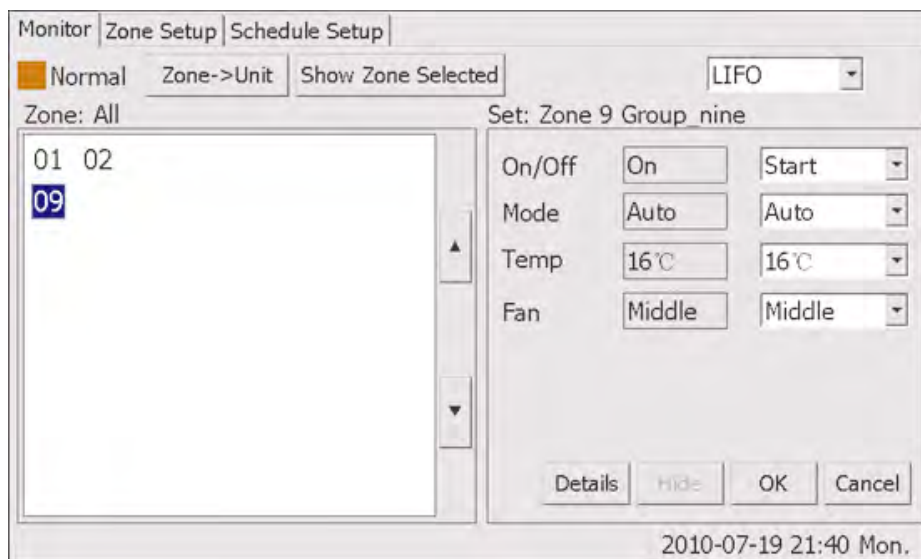
We can set several group with same function or near position as one zone.  
 We can control the whole zone, also can control one group individually. Default group can put into one corresponding zone.  
 Minimum one zone has one group, maximum one zone can have 128 groups.

## Indoor unit display



The indoor unit be checked will display in this page, if one page can't display all the units, we can use page up/down button to check.  
 use green color standard unit in operation, use brown color standard for stop unit, use RED color standard for the unit with malfunction.

## Zone display



Default design are: each indoor unit stay at the corresponding number zone, such as No.1 unit stay no.1 zone, No.2 unit stay at zone 2, No. 128 unit stay at no.128 zone.  
 When the indoor unit in communications, the zone can be displayed.  
 When select one zone, the right side condition frames will display the indoor unit condition with smallest no. of this zone.

## Display and LCD explanation



### Button Explanation:

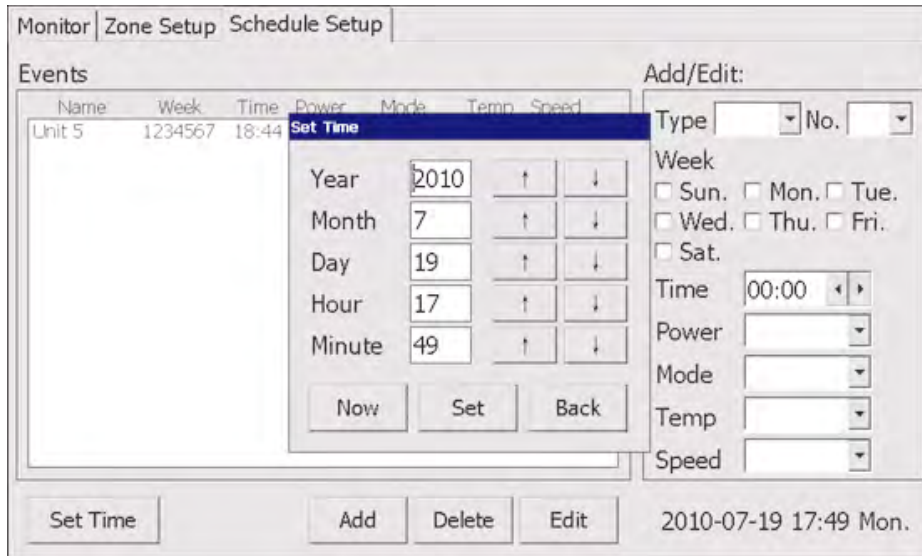
- Monitor: Main View
- Zone Setup: Zone set
- Schedule Setup: Weekly timer setting
- Unit->Zone: From Unit no. display change to Zone display
- Zone-> unit: From Zone display to Unit no. display
- Start All: All ON
- Stop All: All OFF
- Show Zone Schedule: Display the indoor unit no.
- On/Off: Unit On/Off
- Operation Mode: Operation mode and setting
- Set Temperature: Temp. display and setting
- Fan Speed: Fan speed display and setting
- TC1 Temp: Indoor gas pipe temp.
- TC2 Temp: Indoor liquid pipe temp.
- Room Temp: Indoor real temp.
- Error Code: Error code
- OK: All the condition setting finished, press OK send out order;
- Cancel: Cancel

### Icons

- grey: Operation
- Brown :Stop
- Red: malfunction

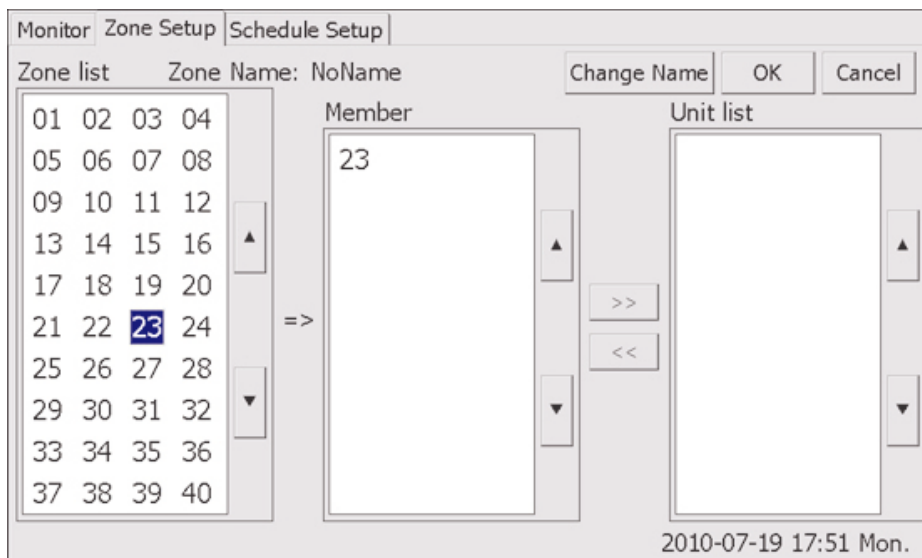
## 10. Operation instructions

### 10.1 Date and time setting



Press "set time", the timer setting interface will pop-up. adjust the year/month/date and time by pressing the up/down button.

### 10.2 Zone name setting



Select the zone No. need to be changed, press "change name", enter the zone name interface.

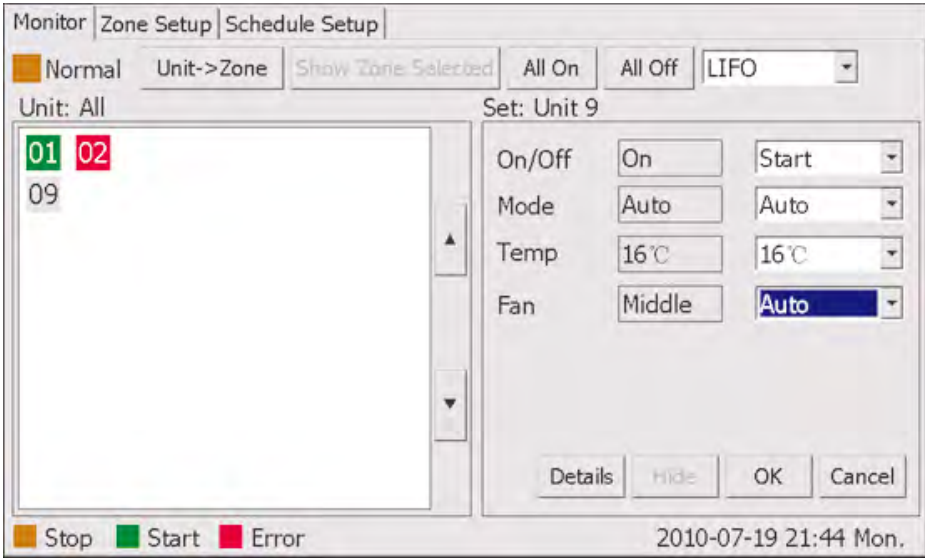


The image shows a 'Set Zone Name' interface. At the top, it says 'Set Zone Name'. Below that, there are two labels: 'Original Name: NoName' and 'New Name: snow'. The 'New Name' is entered into a text box. Below the text box is a virtual keyboard with three rows of buttons: the first row has 'q', 'w', 'e', 'r', 't', 'y', 'u', 'i', 'o', 'p', and 'Backspace'; the second row has 'a', 's', 'd', 'f', 'g', 'h', 'j', 'k', 'l', and 'Caps'; the third row has 'z', 'x', 'c', 'v', 'b', 'n', 'm', 'Space', 'Clear', and 'Shift'. At the bottom right, there are two buttons: 'Set' and 'Back'.

Input name and press set, then the setting finished, pls. notice: Maximum 12 letters permitted.

### 10.3 Control explanation

Individual indoor unit setting



The image shows a 'Zone Setup' interface. At the top, there are three tabs: 'Monitor', 'Zone Setup', and 'Schedule Setup'. Below the tabs, there are several buttons: 'Normal', 'Unit->Zone', 'Show Zone Selected', 'All On', 'All Off', and a dropdown menu set to 'LIFO'. Below these buttons, there are two sections: 'Unit: All' and 'Set: Unit 9'. The 'Unit: All' section shows a list of units: '01' (green), '02' (red), and '09' (grey). The 'Set: Unit 9' section shows settings for 'Unit 9': 'On/Off' is 'On', 'Mode' is 'Auto', 'Temp' is '16°C', and 'Fan' is 'Auto'. At the bottom, there are buttons for 'Details', 'Hide', 'OK', and 'Cancel'. A legend at the bottom left shows 'Stop' (orange), 'Start' (green), and 'Error' (red). The date and time '2010-07-19 21:44 Mon.' are displayed at the bottom right.



Set the indoor unit

Use ON/OFF to set start/stop the unit setting;

ON= Start the unit, OFF=stop the unit, No change=don't change the condition;

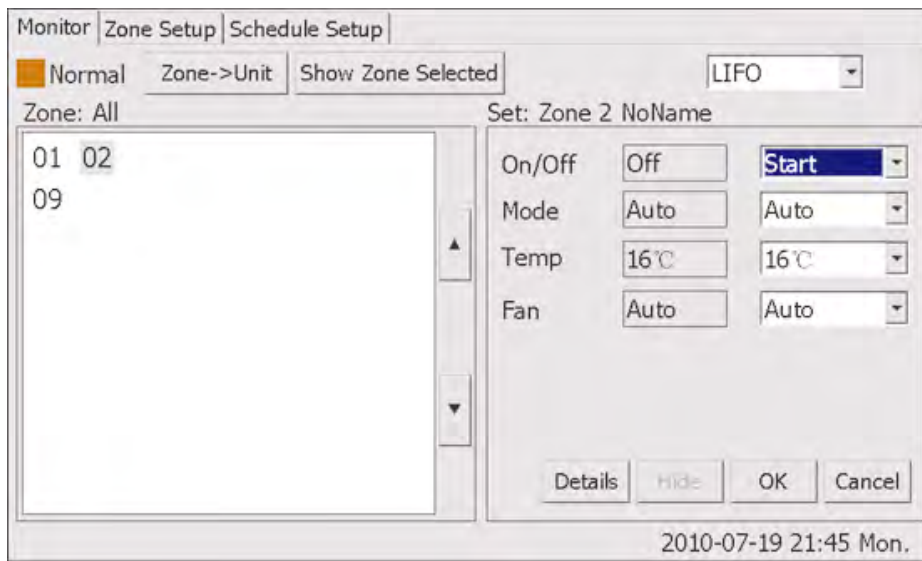
Use Mode to set the operation setting; Auto=auto, Heat=heating, Cool=Cooling, Dry=dehumidify, Fan =Airflow; no change =don't change the

current mode, Use temp. to set the temperature(16~30degree),set no change=don't change current temp, fan

=set airflow speed, auto=auto, high=High speed airflow, middle =middle speed airflow, low=low speed airflow, no change=don't change the current airflow.

The date displayed is current setting condition.

Zone indoor unit setting



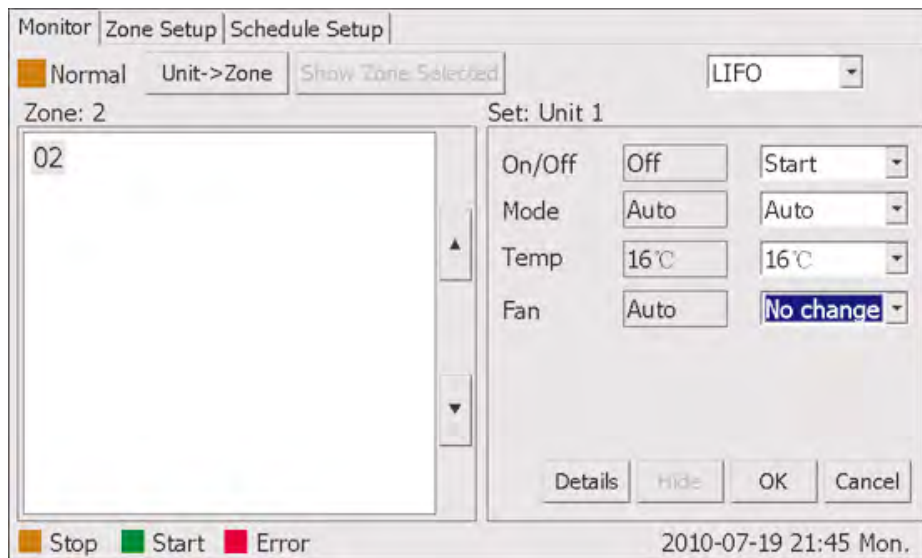
Whole zone control

Set one zone, control from the right size control zone, control setting method same as individual control.

The frame displayed condition is the minimum no. indoor unit condition of this zone.

Individual control of zone

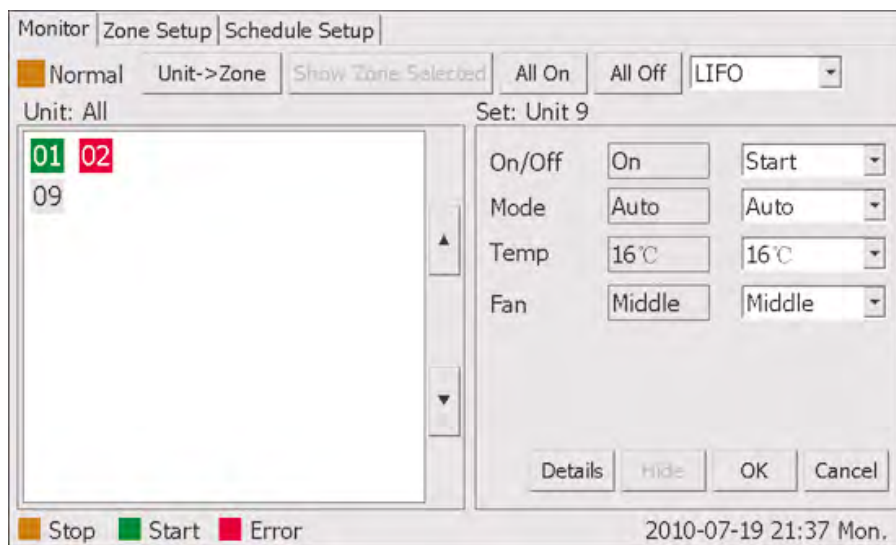
Press "show zone selected", the interface will display all the indoor units of target zone.



Press the indoor unit to be controlled, control the indoor unit from right size frame, the control method is the same as individual control.

All the indoor unit setting

Press "All on", all the indoor units start to operation, keep all the status before start, press "All off", stop all the indoor units, the previous setting status don't change.



## 10.4 Schedule setting

The screenshot shows the 'Schedule Setup' menu with the following components:

Name	Week	Time	Power	Mode	Temp	Speed
Unit 5	1234567	18:44	On	Auto	22°C	High
Zone 5	1234567	18:44	On	Auto	22°C	High
Unit All	1234567	18:44	On	Auto	22°C	High
Unit All	1245	18:44	Off	Auto	22°C	Middle
Unit All	67	18:44	On	Fan	22°C	Middle

The 'Add/Edit' panel includes:

- Type: [Dropdown]
- No.: [Dropdown]
- Week:  Sun.  Mon.  Tue.  Wed.  Thu.  Fri.  Sat.
- Time: 00:00 [Left Arrow] [Right Arrow]
- Power: [Dropdown]
- Mode: [Dropdown]
- Temp: [Dropdown]
- Speed: [Dropdown]

Buttons at the bottom: Set Time, Add, Delete, Edit. Date/Time: 2010-07-19 21:48 Mon.

Type : Select indoor no. setting or zone setting,. Select "zone"= setting as zone, select "group"= setting as indoor unit no.

No: Zone no. or indoor unit No.

Setting: set timer setting method and indoor unit no. or zone no., select "\v/"

before the day no., then set Time, ON/OFF,MODE, airflow speed, then press ADD, one setting will finished.

Edit: select the items to be edited, right size frame will display all the parameters, change the parameter, then press Edit, the revise will be finished.

Delete :Select the items to be deleted, press "delete", the operation will be finished.

## 10.5 Zone Setting

The screenshot shows the 'Zone Setup' menu with the following components:

- Zone list: 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40. (01 and 02 are highlighted in green, 23 is highlighted in blue)
- Zone Name: NoName
- Change Name, OK, Cancel buttons.
- Member list: 23
- Unit list: 09
- Navigation arrows (up/down) for each list.
- Transfer buttons: >> and <<

Date/Time: 2010-07-19 21:49 Mon.

Zone list: Zone no.

Member: indoor unit of the zone Group list\*indoor unit no. First time operation, each indoor unit default as itself zone, such as no.1 unit as zone 1,no. 128 unit as zone no. 128.

If we want to change the zone setting, first take out the indoor unit from default zone, then add to target zone.

Zone setting

Select the zone no. from left side frame, then select the target no. of the right side frame, press <<,the indoor unit will adds to target zone, \*member\* list display the unit added.

Zone Cancel

Press the target zone no., "Member" list will display all the indoor unit No., select one indoor unit no., press >>, the unit no. will disappear from this zone, and right side "group list" will display the unit no.

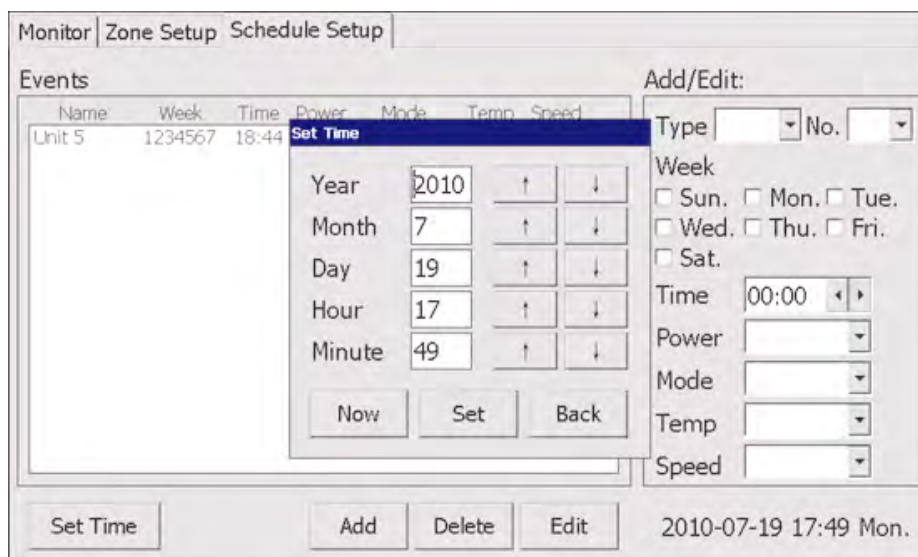
When cancel all the indoor unit from this zone, this zone no. will disappear.

## 10.6 Off Power Clock setting

If power off time less than 192 hours, the internal time no need to reset; If the power off time more than 192 hours, the internal clock will stop, all the time will disappear and need to reset the time.

Notice:

If the power off time more than 192 hours, and don't reset the clock, the system will supply wrong time schedule.



Press "Set time", the date setting interface will pop-up, adjust the time by using ↑, ↓ button.

How to choice the 3 operation modes for connecting to Amazon-Unitary Smart-Multi upgrade.

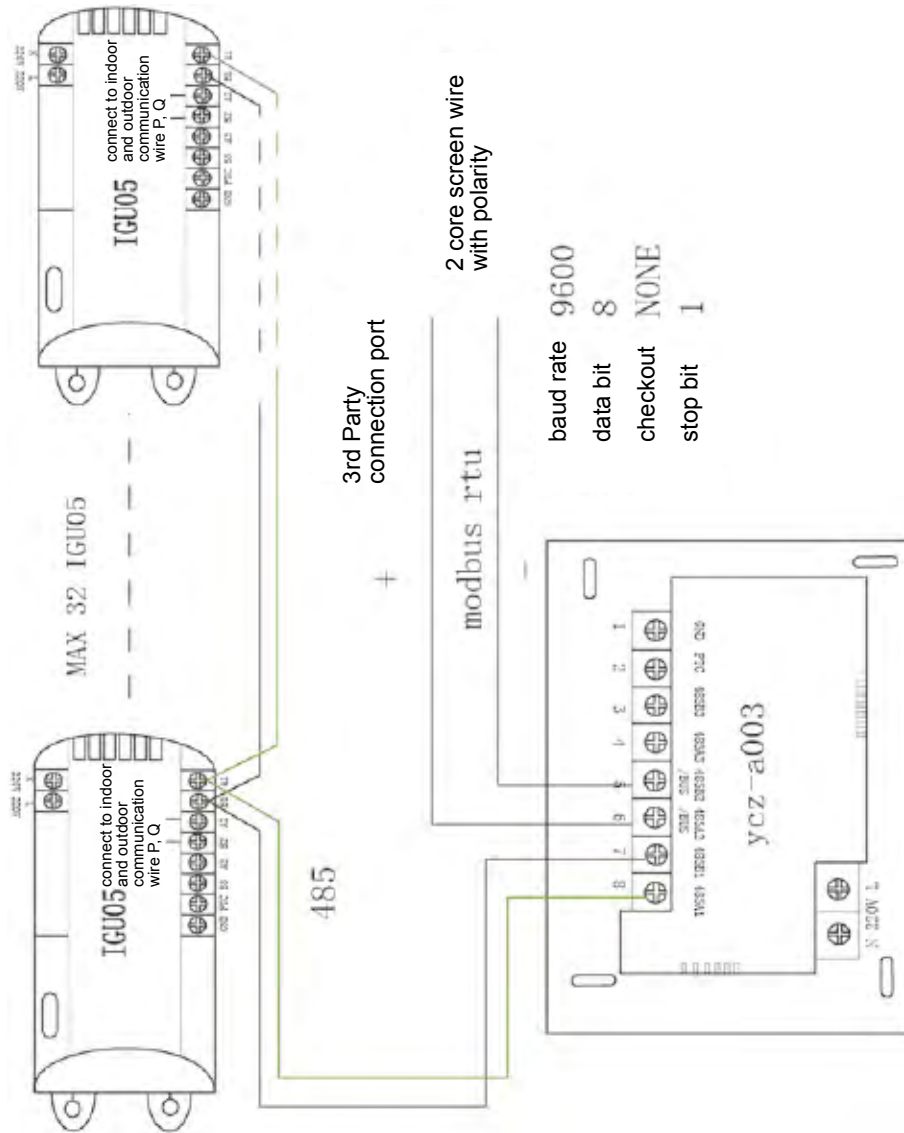
- Switch on the unit
- Select the desired operation mode in the window
- Follow the indication to reboot the system (switch off the power supply).

## 11. Troubleshooting

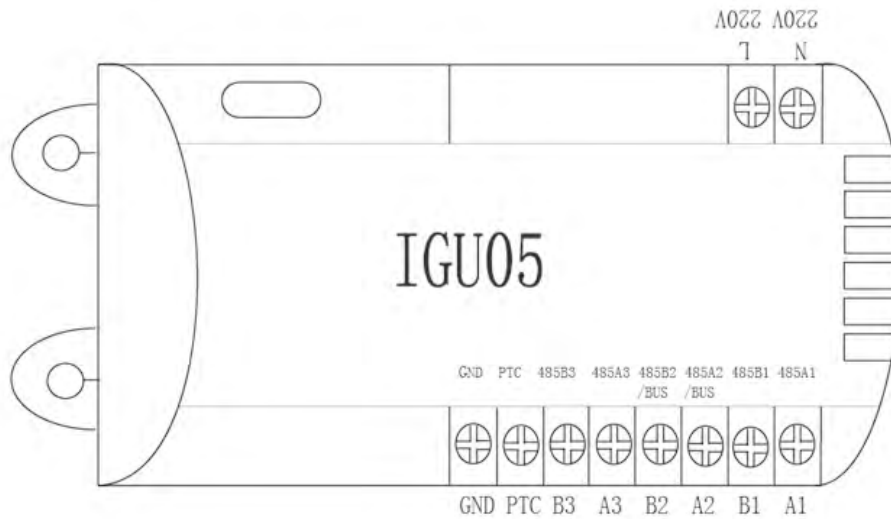
phenomenon	Reason	Solutions
Unit no. display Red	This unit Error happens	Check the unit
Press the LCD and no action happens	Malfunction happens because of static electricity	Stop the power and restart the unit, if still can't resolve it, contact our after-service people.
No signal display o the LCD	Malfunction happens because of static electricity	Stop the power and restart the unit, if still can't resolve it, contact our after-service people.
Controller is very hot when touch it	Pls. check whether the ambient temp. is very hot	Pls. check whether the ambient temp. is very hot
Air conditioner operate automatically	Pls. check the schedule timer setting, change it if needed	Pls. try to install the unit below 40°C Degree atmosphere

## 12. 3rd Party connection port

### YCZ-A003, IGU05 wiring diagram



## IGU05



### Connector:

L,N: power supply 220VAC 50HZ

GND: preset

PTC: preset

485B3 (B3) : preset

485A3 (A3) : preset

485B2 /BUS(B2) : connect to indoor P,Q

485A2 /BUS (A2) : connect to indoor P,Q

485B1 (B1) : connect to YCZ-A003 485B1

485A1 (A1) : connect to YCZ-A003 485A1

### Function:

protocol transfer: -----home bus transfer to 485

Home bus: 2400bps and 9600bps baud rate, you need restart the power supply after change the baud rate

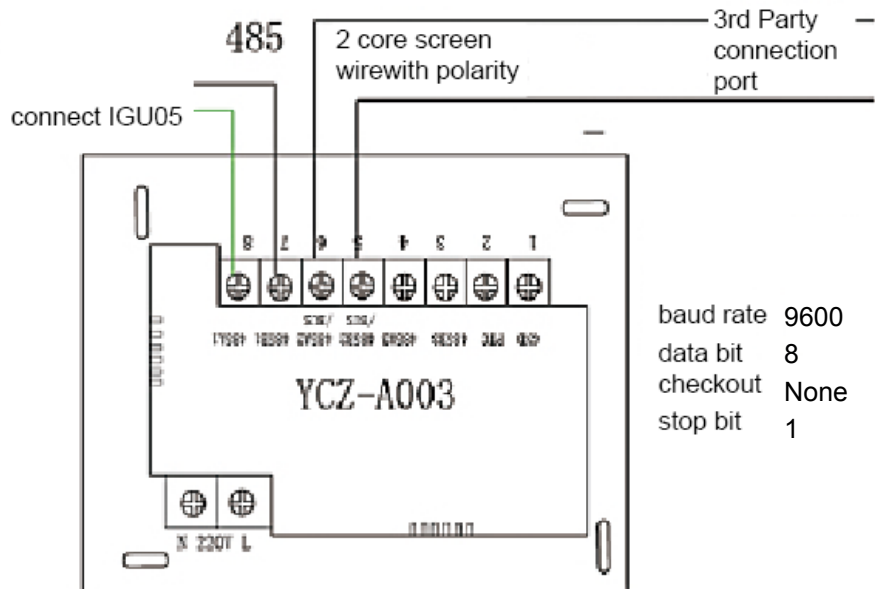
485: 9600bps

1: One outdoor system need use one IGU05

2: One central controller can connect 32 piece of IGU05 maximum

3: If only have one outdoor system also need connect IGU05

## 12.1 Central controller connector definition



### Connector definition:

L,N: power supply 220VAC 50HZ

GND: preset

PTC: preset

485B3 (B3) : preset

485A3 (A3) : preset

485B2 /BUS(B2) : connect to exterior equipment "-"

485A2 /BUS (A2) : connect to exterior equipment "+"

485B1 (B1) : connect to IGU05 485B1

485A1 (A1) : connect to IGU05 485A1

### Function:

1. control-single unit control, zone control, total control
2. zone setting and zone naming
3. weekly timer-can set single unit, zone, total unit
4. the exterior equipment modbus rtu connector

The exterior equipment connector slave address default:1



## 12.2 YCZ-A003 exterior equipment connector table

DI: Input signal

DO: Output signal

AI: Input signal

AO: Output signal

COM: Communication port

Signal type is depending on the BAS system connector. For example: DO mean BAS system output signal, need connect to air conditioner DI.

Baud rate 9600

Data bit 8

Parity bit NO

Stop bit 1

Standard Modbus (RTU) protocol

Use 03H code to search, use 10H code to control.

No.	description	protocol address	protocol annex address	type	state1	state2	state3	state4		remark
1	preset	40005	0	DO						
2	Total open/close setting	40005	1	DO	0: close	1: open				
3	preset	40005	2	DI						
4	preset	40005	3	DI						
5	preset	40005	4							
6	preset	40005	5							
7	preset	40005	6							
8	preset	40005	7							
9	preset	40005	8							
10	preset	40005	9							
11	preset	40005	10							
12	preset	40005	11							
13	preset	40005	12							
14	preset	40005	13							
15	preset	40005	14							
16	preset	40005	15							

No.	description	protocol address	protocol annex address	type	state1	state2	state3	state4		remark
17	No.1 indoor mode setting	40006		AO	0: auto	1: fan	2: cooling	3: dehumidify	4: heating	read/write
18	No.2 indoor mode setting	40007		AO	0: auto	1: fan	2: cooling	3: dehumidify	4: heating	read/write
19	No.3 indoor mode setting	40008		AO	0: auto	1: fan	2: cooling	3: dehumidify	4: heating	read/write
20	No.4 indoor mode setting	40009		AO	0: auto	1: fan	2: cooling	3: dehumidify	4: heating	read/write
21	No.5 indoor mode setting	40010		AO	0: auto	1: fan	2: cooling	3: dehumidify	4: heating	read/write
22	---	---		---	---	---	---	---	---	---
23	No.125 indoor mode setting	40130		AO	0: auto	1: fan	2: cooling	3: dehumidify	4: heating	read/write
24	No.126 indoor mode setting	40131		AO	0: auto	1: fan	2: cooling	3: dehumidify	4: heating	read/write
25	No.127 indoor mode setting	40132		AO	0: auto	1: fan	2: cooling	3: dehumidify	4: heating	read/write
26	No.128 indoor mode setting	40133		AO	0: auto	1: fan	2: cooling	3: dehumidify	4: heating	read/write
27	No.1 indoor set temperature	40134		AO						16-30
28	No.2 indoor set temperature	40135		AO						16-30
29	No.3 indoor set temperature	40136		AO						16-30
30	No.4 indoor set temperature	40137		AO						16-30
31	No.5 indoor set temperature	40138		AO						16-30
32	---	---		---	---	---	---	---	---	---
33	No.125 indoor set temperature	40258		AO						16-30
34	No.126 indoor set temperature	40259		AO						16-30
35	No.127 indoor set temperature	40260		AO						16-30

No.	description	protocol address	protocol annex address	type	state1	state2	state3	state4		remark
36	No.128 indoor set temperature	40261		AO	0: auto	1:low speed	2:middle speed	3:high speed		16-30
37	No.1 indoor fan speed setting	40262		AO	0: auto	1:low speed	2:middle speed	3:high speed		read/write
38	No.2 indoor fan speed setting	40263		AO	0: auto	1:low speed	2:middle speed	3:high speed		read/write
39	No.3 indoor fan speed setting	40264		AO	0: auto	1:low speed	2:middle speed	3:high speed		read/write
40	No.4 indoor fan speed setting	40265		AO	0: auto	1:low speed	2:middle speed	3:high speed		read/write
41	No.5 indoor fan speed setting	40266		AO	0: auto	1:low speed	2:middle speed	3:high speed		read/write
42	---	---		---	---	---	---	---	---	---
43	No.125 indoor fan speed setting	40386		AO	0: auto	1:low speed	2:middle speed	3:high speed		read/write
44	No.126 indoor fan speed setting	40387		AO	0: auto	1:low speed	2:middle speed	3:high speed		read/write
45	No.127 indoor fan speed setting	40388		AO	0: auto	1:low speed	2:middle speed	3:high speed		read/write
46	No.128 indoor fan speed setting	40389		AO	0: auto	1:low speed	2:middle speed	3:high speed		read/write
47	No.1 indoor ambient temperature	40390		AI						only/need
48	No.2 indoor ambient temperature	40391		AI						only/need
49	No.3 indoor ambient temperature	40392		AI						only/need
50	No.4 indoor ambient temperature	40393								
51	No.5 indoor ambient temperature	40394								
52	---	---		---	---	---	---	---	---	---

No.	description	protocol address	protocol annex address	type	state1	state2	state3	state4	remark
53	No.125 indoor ambient temperature	40514							
54	No.126 indoor ambient temperature	40515							
55	No.127 indoor ambient temperature	40516							
56	No.128 indoor ambient temperature	40517							
57	No.1 indoor on/off	40518	0	DI	0:off	1:on			read/write
58	No.2 indoor on/off	40518	1	DI	0:off	1:on			read/write
59	No.3 indoor on/off	40518	2	DI	0:off	1:on			read/write
60	No.4 indoor on/off	40518	3	DI					read/write
61	No.5 indoor on/off	40518	4	DI					read/write
62	---	---		---	---	---	---	---	---
63	No.125 indoor on/off	40525	12						
64	No.126 indoor on/off	40525	13						
65	No.127 indoor on/off	40525	14						
66	No.128 indoor on/off	40525	15						
67	No.1 indoor error	40526	0		0:normal	1:error			only read
68	No.2 indoor error	40526	1		0:normal	1:error			only read
69	No.3 indoor error	40526	2		0:normal	1:error			only read

No.	description	protocol address	protocol annex address	type	state1	state2	state3	state4		remark
70	No.4 indoor error	40526	3	DI						only read
71	No.5 indoor error	40526	4	DI						only read
72	---	---		---	---	---	---	---	---	---
73	No.125 indoor error	40533	12							
74	No.126 indoor error	40533	13							
75	No.127 indoor error	40533	14							
76	No.128 indoor error	40533	15							
77	No.1 indoor TC1 temperature	40538		AI						only read
78	No.2 indoor TC1 temperature	40539		AI						only read
79	No.3 indoor TC1 temperature	40540		AI						only read
80	No.4 indoor TC1 temperature	40541		AI						only read
81	No.5 indoor TC1 temperature	40542		AI						only read
82	---	---		---	---	---	---	---	---	---
83	No.125 indoor TC1 temperature	40662		AI						only read
84	No.126 indoor TC1 temperature	40663		AI						only read
85	No.127 indoor TC1 temperature	40664		AI						only read
86	No.128 indoor TC1 temperature	40665		AI						only read
87	No.1 indoor TC2 temperature	40666		AI						only read
88	No.2 indoor TC2 temperature	40667		AI						only read

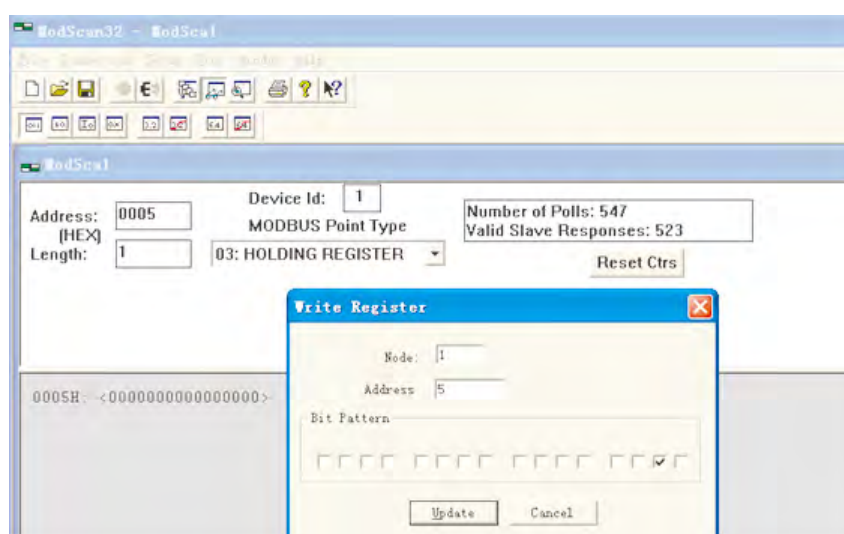
No.	description	protocol address	protocol annex address	type	state1	state2	state3	state4	remark
89	No.3 indoor TC2 temperature	40668		AI					only read
90	No.4 indoor TC2 temperature	40669		AI					only read
91	No.5 indoor TC2 temperature	40670		AI					only read
92	---	---		---	---	---	---	---	---
93	No.125 indoor TC2 temperature	40790		AI					only read
94	No.126 indoor TC2 temperature	40791		AI					only read
95	No.127 indoor TC2 temperature	40792		AI					only read
96	No.128 indoor TC2 temperature	40793		AI					only read

## 12.4 modscan test example

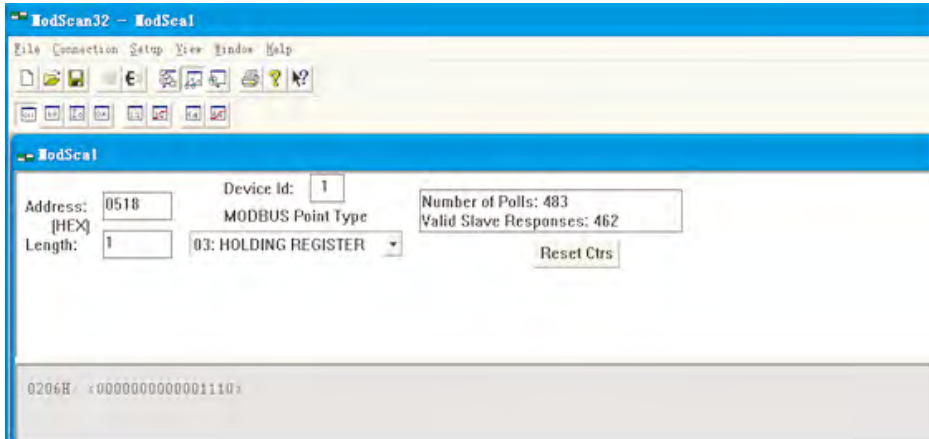
Test tool: modscan slave address: 1

1.total on/off

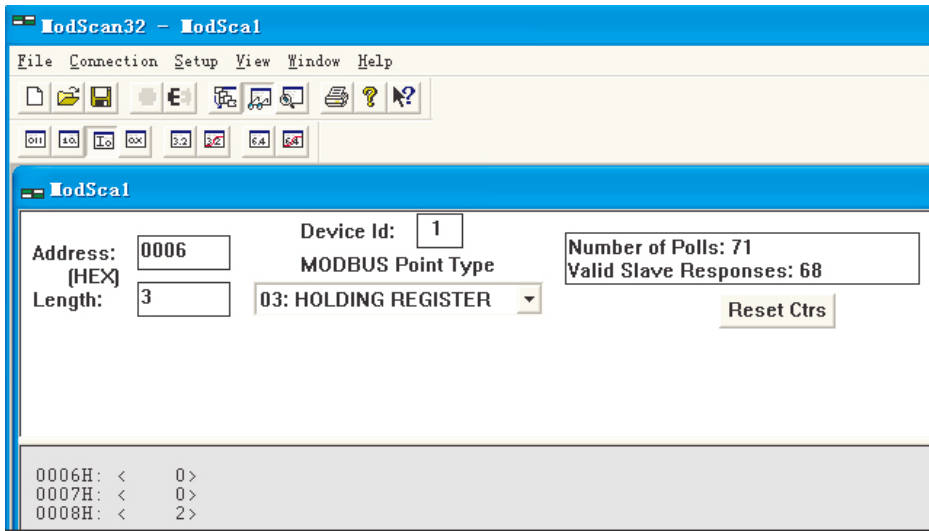
central control mode setting					
total on/off setting	40005	1	DO	0:off	1:on
central control mode state					



Test on/off setting



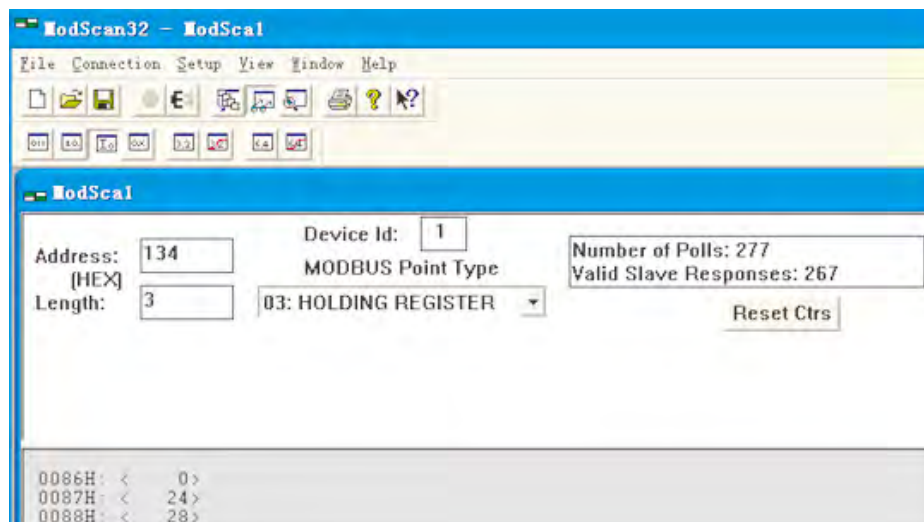
No.1 operation model setting	40006	AO	0:auto	1:fan	2:cooling	3:dehumidify	4:heating	read/write
------------------------------	-------	----	--------	-------	-----------	--------------	-----------	------------



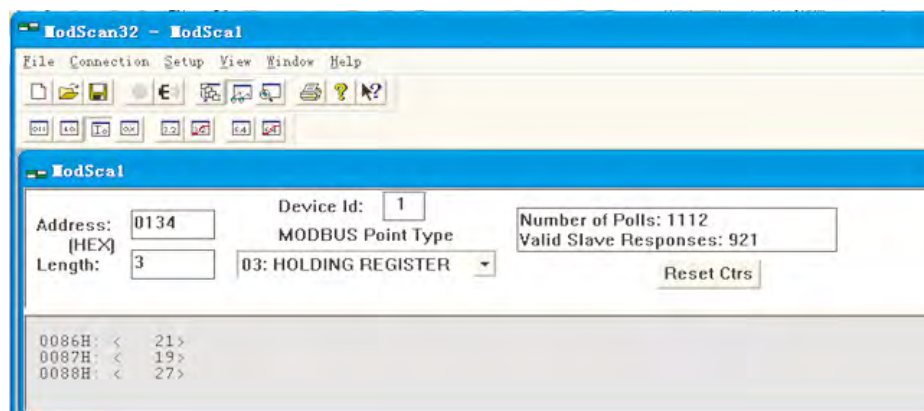
The same as the wired controller display.

### 3. Indoor set temp. Ambient temp. read and write

No.1 temp set	40134	AO						16-30,wirte
No.2 temp set	40135	AO						16-30,wirte



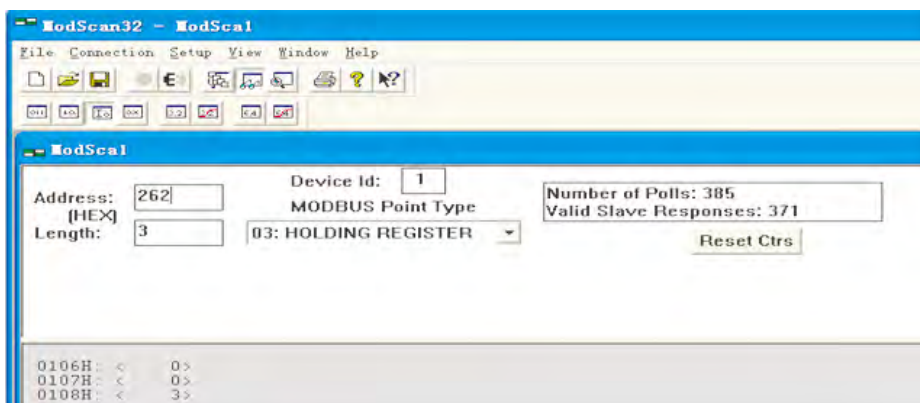
No.3 indoor 28 degree, the same as the wired controller display



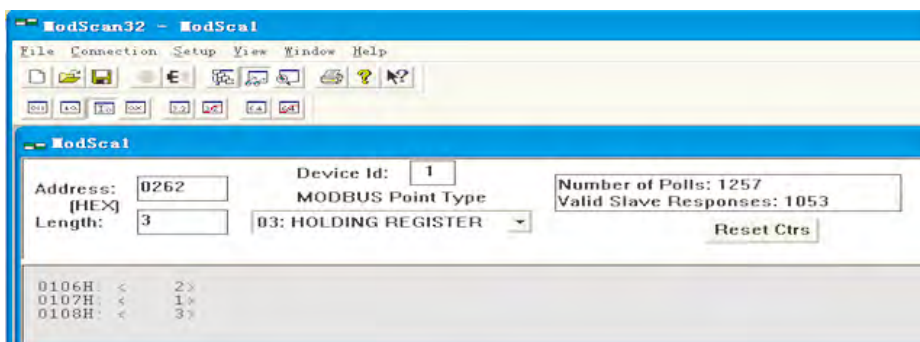


#### 4. Indoor fan speed

No.1 fan speed set	40262		AO	0:auto	1:low speed	2:middle speed	3:high speed	
No.2 fan speed set	40263		AO	0:auto	1:low speed	2:middle speed	3:high speed	

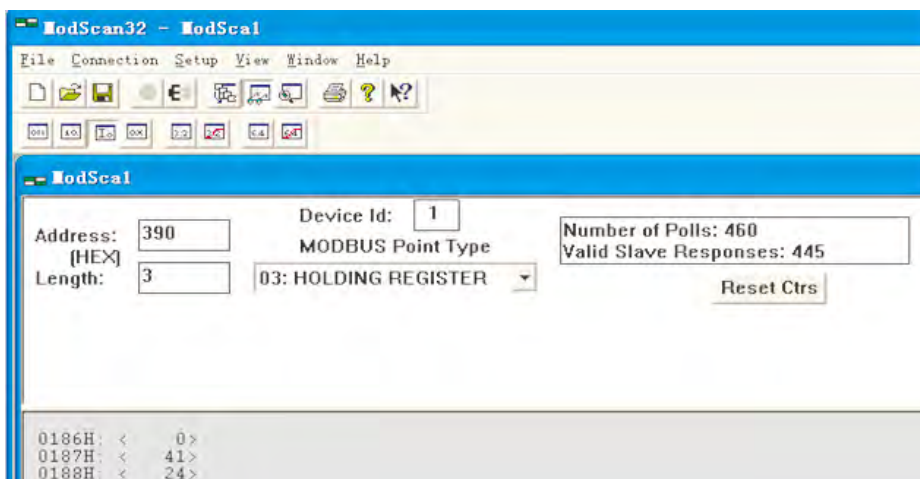


No. 3 indoor high speed\*the same as wired controller display. Fan speed display and set ok.



#### 5. Indoor ambient temp.

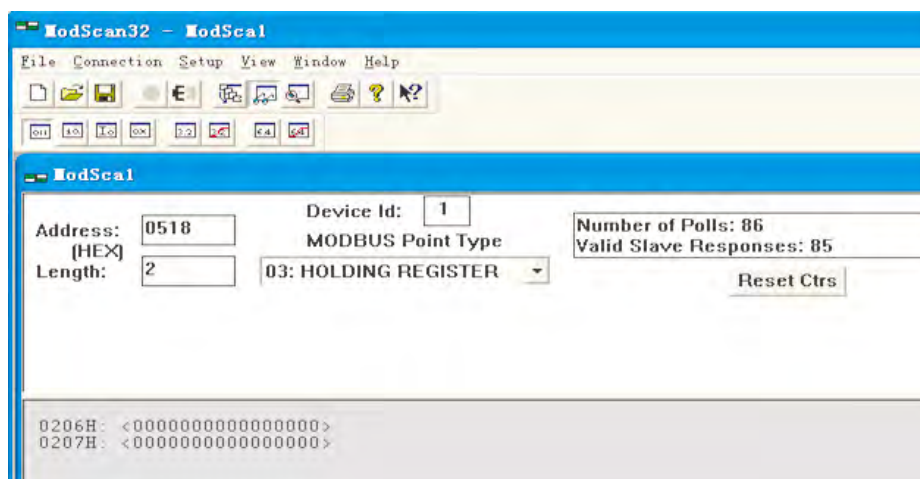
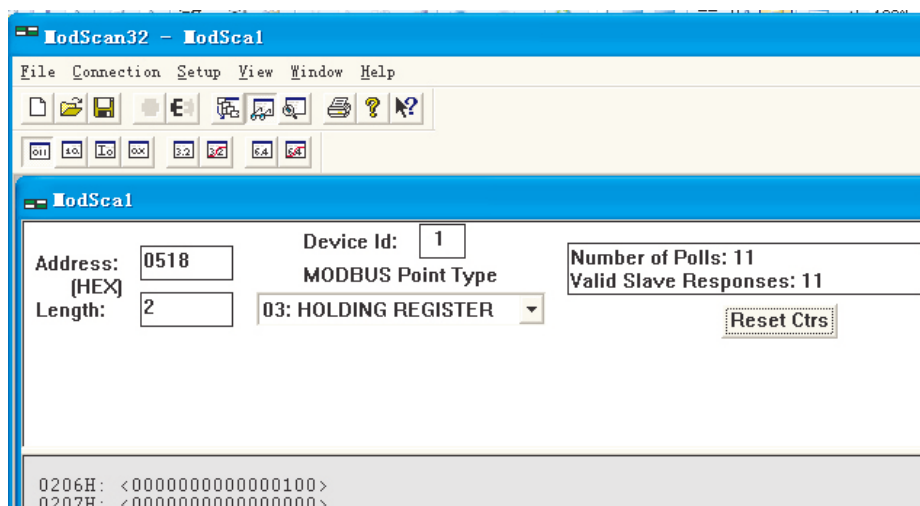
No.1 indoor ambient temp.	40390		AI					
No.2 indoor ambient temp.	40391		AI					



The temp. the same as wired controller display.

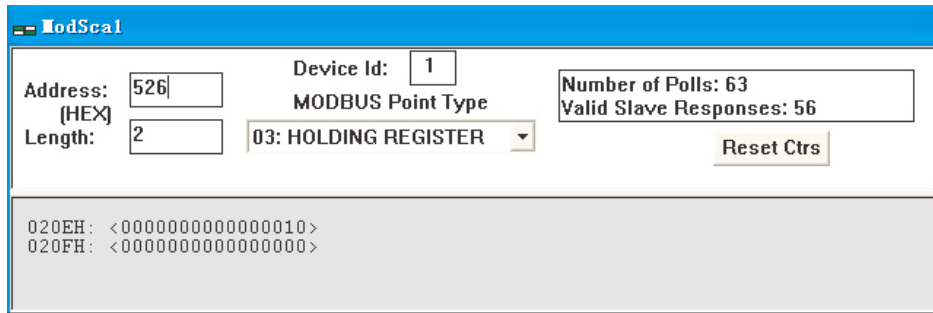
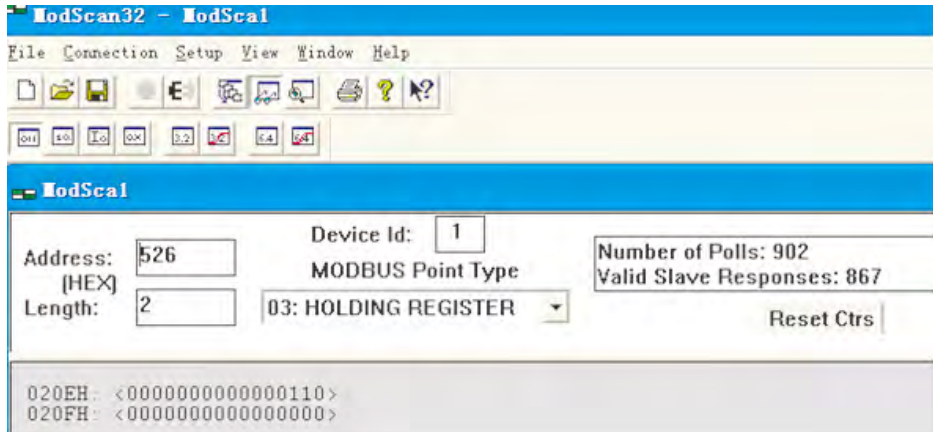
## 6. Indoor on/off, read/write

No.1 indoor on/off state	40518	0	DI	0:off	1:on				
No.2 indoor on/off state	40518	0	DI	0:off	1:on				
No.3 indoor on/off state	40518	0	DI	0:off	1:on				



## 7. Indoor error state

No.1 indoor error	40526	0	DI	0:normal	1:error				only read
No.2 indoor error	40526	1	DI	0:normal	1:error				only read
No.3 indoor error	40526	2	DI	0:normal	1:error				only read



## 5. Building management system

### 5.1 HCM-01A



MRV	LCAC			
	Smart Power	Super Match	R410A ON/OFF	R22 ON/OFF
√	√	√		

- Local version or PC version; Convert RS-485 to USB
- Max. 400 indoor units can be controlled
- Max. 32 systems/ outdoor units, each system unit requires one HA-M\*1
- Brand new interface design
- Windows system, 32bits/64bits compatible
- Schedule setting
- Power consumption report when connected with IGU02

## • Brief introduction

BMS system transfer the data of air conditioner to the computer through the inverter protocol adapter gateway, and the user can monitor the working state and the power consumption of indoor and outdoor on real time at the computer. Set the parameter of system in time; start or stop a certain indoor individually, or in group as the request; receive the alarm and make some measures on real time; deal with the data and make some cost account tables

## • Appliances required for HCM-01A system

1. Gateway: convert the protocol of air conditioning system to 485 protocol.
2. Software: enable the ac parameters can be shown and controlled on the computer. Each computer can install only one set of software.
3. Adapter: USB to RS-485: convert 485 to USB.
4. Gateway: HA-MA164AD, HA-MB164AD, IGU02.

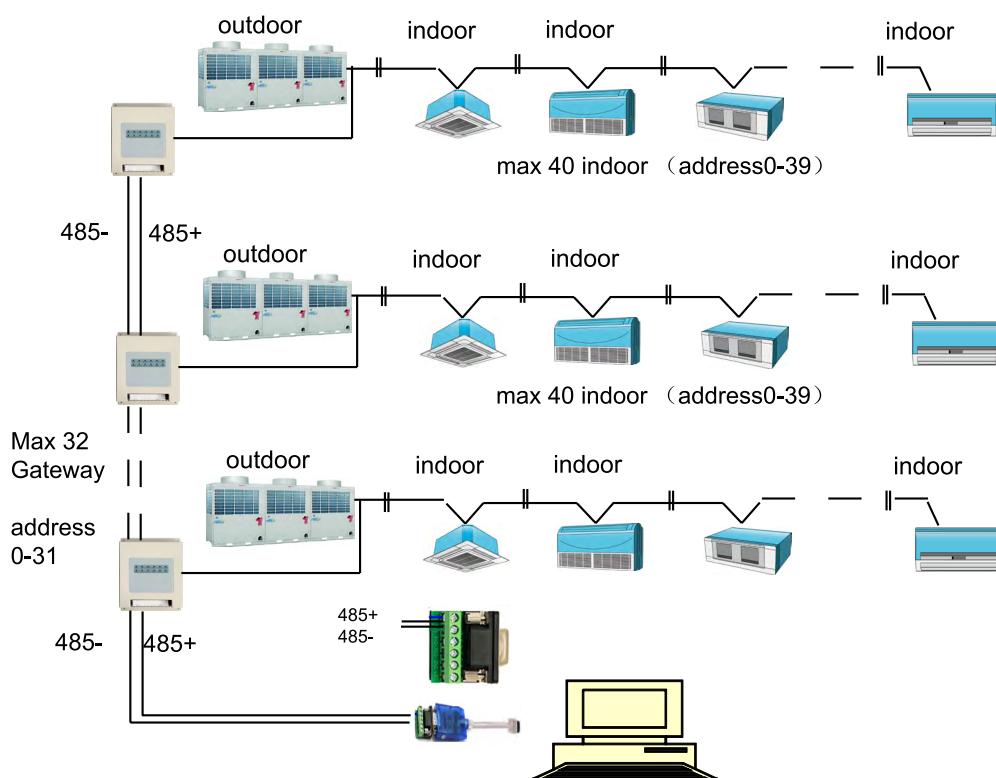
## • Controllable scale

1. Maximum 40 (0-39) indoor units can be connected to one cooling system.
2. Each cooling system required one protocol adapter, gateway.
3. Maximum 32 gateway can be connected to one set of software. Maximum 400 indoor units can be controlled by one set of software.
4. During the installation, there are two conditions, 32 gateway and 400 indoor units. Which condition is first reached, no more gateway or indoor units can be added.

For example,

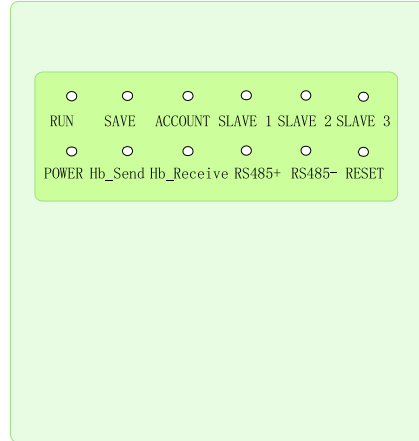
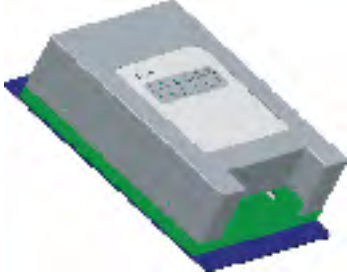
- The software (HCM-01A) has connected 32 gateway and 200 indoor units. No more gateway can be added.
- The software (HCM-01A) has connected 400 indoor units and 20 gateway. No more indoor units can be added, though the software can still have 12 more gateway .

## • System Wiring Diagram



• Appearance and dimension of protocol adapter

**Appearance:**



Dimension: 200\*130\*43(mm)

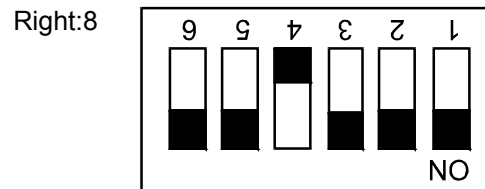
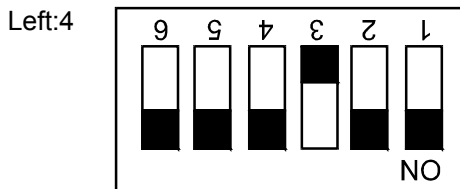
• System Wiring Diagram

**Wiring request**

1. Protocol adapter needs 220V AC power supply.
2. The communication line between indoor and outdoor and the bus line 485 among the protocol adapters should be through steel wire sleeve in the H-CACSII.
3. Set the indoor central address and the indoor/outdoor unit address by hand.
4. The system with H-CACSII should not set the group function of wired controller.

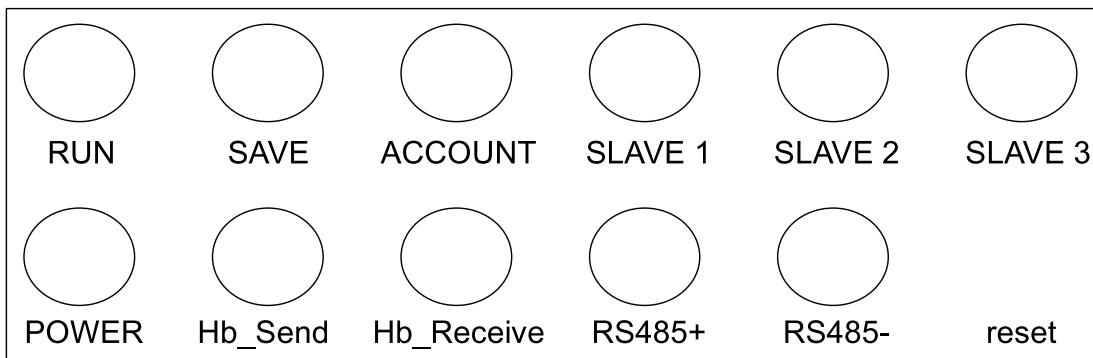
**Dip switch setting:**

ON: 0; OFF: 1

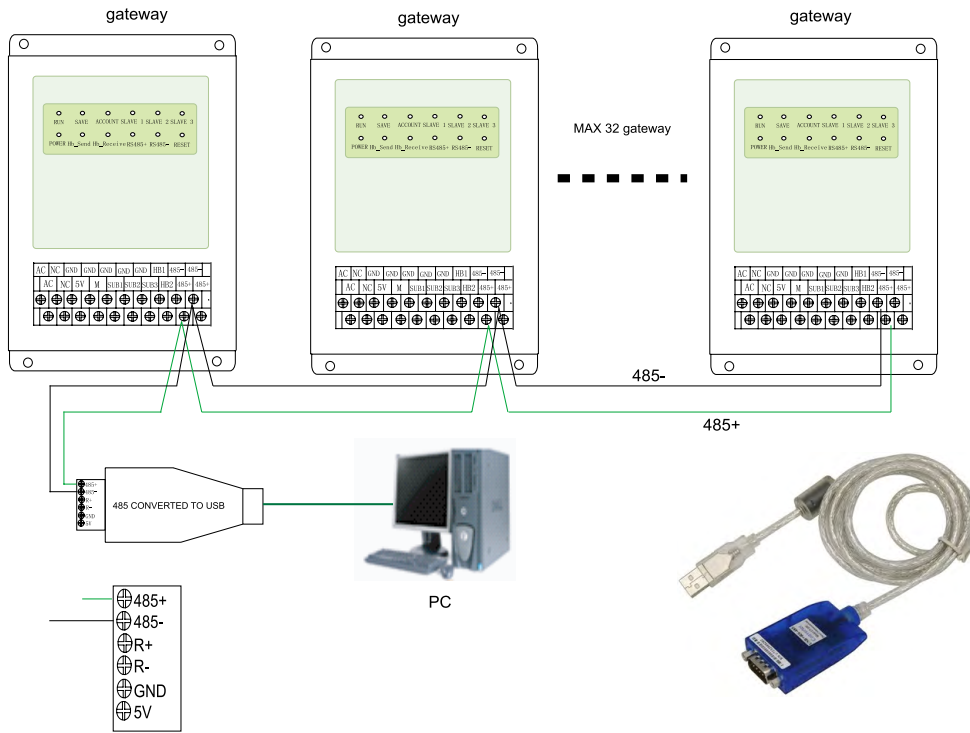
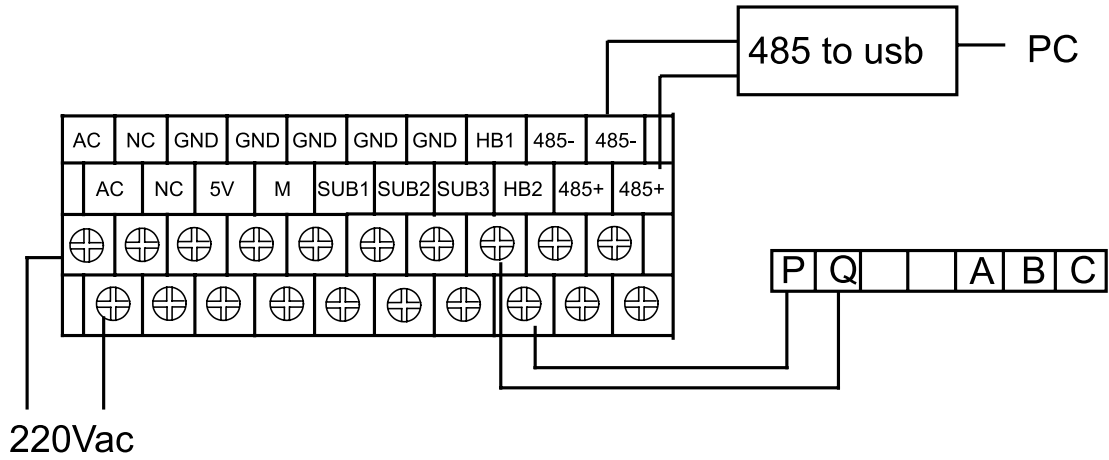


Shows address of IGU02, address range: 1-32.

**Communication lamp definition:**



**Wiring diagram**



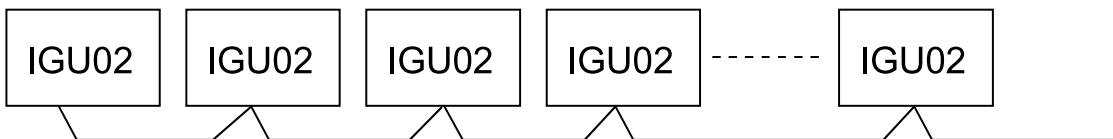
Adapter: RS-485 to USB

Wirings:

1. Power supply wires: 220V AC, 50hz.  
Use requested specifications and fix it firmly.

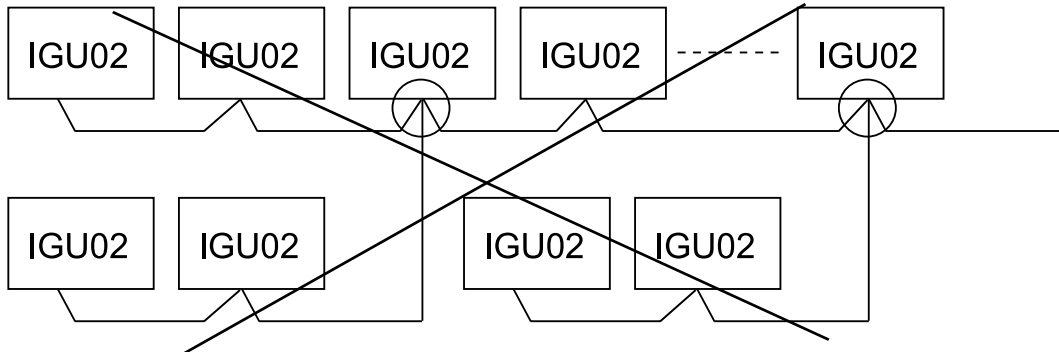
2 Communication wires:

Wires between IGU02 should use two polarity wires and loop connection.



**Warning:**

The following connection (have interconnection) are not allowed:



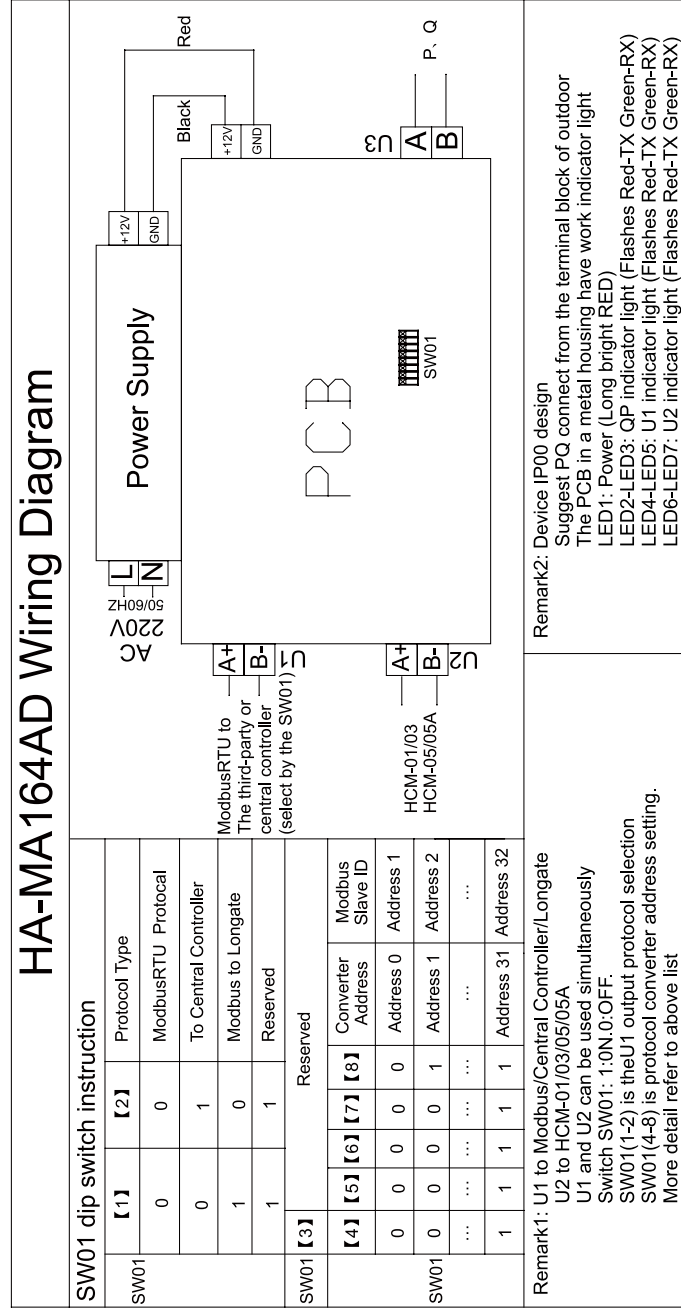
**Notes:**

- (1) Communication wires between IGU02 & IGU02 should use twin-core shielding wires and need to connect to the earth.
- (2) Iron wire sleeve should be used when install the communication wires, and should separate from power wires;
- (3) Communication wires have polarity request;
- (4) Maximum total communication wires length is 500m.

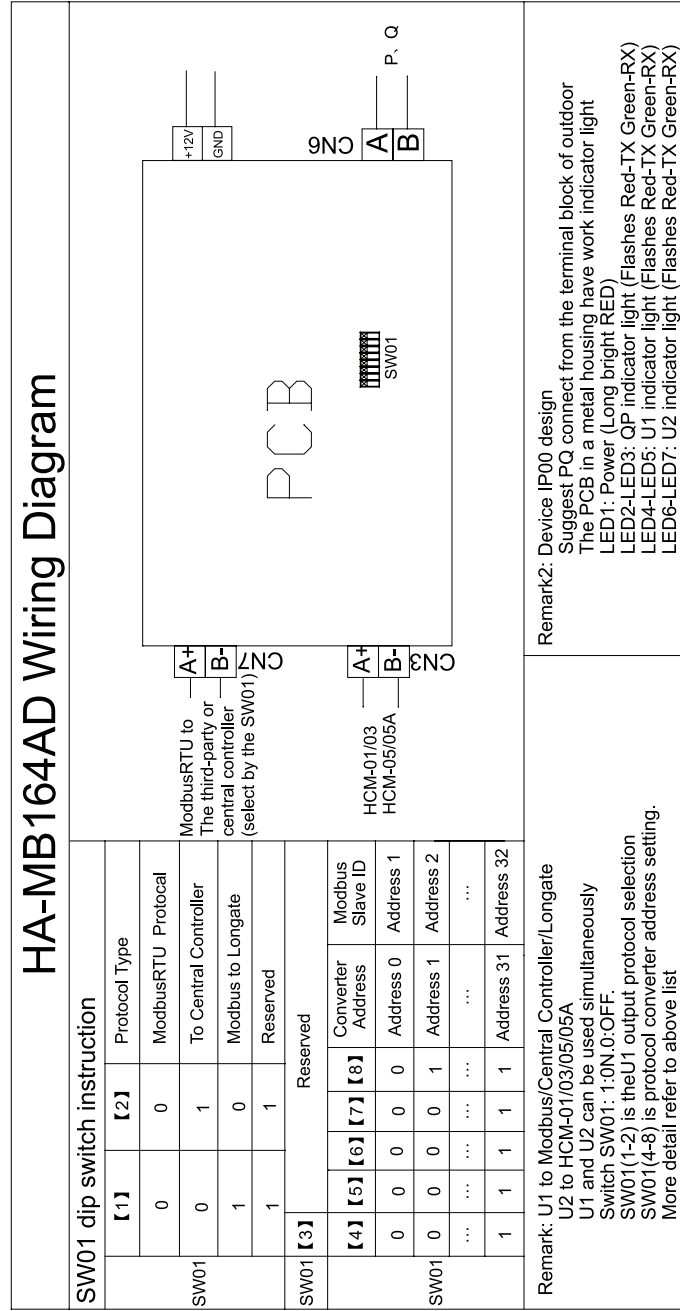
3. Maximum 40sets indoor units should be used in Each outdoor system;
4. When use IGU02, indoor units address should be set manually, and indoor units address setting should from No.0 to the last one in each set outdoor unit system, and indoor & outdoor address (sw03) and central address (sw02) of same indoor unit should be keep the same.
5. The line between indoor and outdoor, the line between gateway and gateway, and pulse line at least 20cm away from strong electrical.



## HA-MA164AD Wiring Diagram



## HA-MB164AD Wiring Diagram



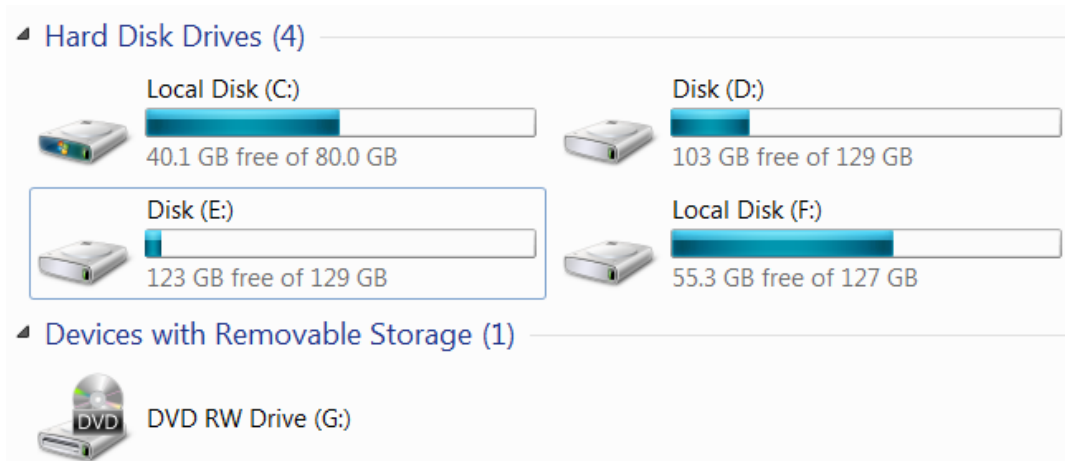
Remark2: Device IP00 design  
Suggest P.Q connect from the terminal block of outdoor  
The PCB in a metal housing have work indicator light  
LED1: Power (Long bright RED)  
LED2-LED3: QP indicator light (Flashes Red-TX Green-RX)  
LED4-LED5: U1 indicator light (Flashes Red-TX Green-RX)  
LED6-LED7: U2 indicator light (Flashes Red-TX Green-RX)

Remark: U1 to Modbus/Central Controller/Longate  
U2 to HCM-01/03/05/05A  
U1 and U2 can be used simultaneously  
Switch SW01: 1:0N 0:OFF.  
SW01(1-2) is the U1 output protocol selection  
SW01(4-8) is protocol converter address setting.  
More detail refer to above list

## • Software Installation

### Install database

1. Insert the disc into CD-ROM. Double click icon. (as follows):



2. The disc contains several driver files for different computer system.

Name	Date modified	Type
Linux x64 (64-bit)	2016/4/19 16:36	File folder
Linux x86 (32-bit)	2016/4/19 16:36	File folder
Linux x86_64	2016/4/19 16:36	File folder
Mac OS 8 9	2016/4/19 16:36	File folder
Mac OS X 10.9 and above	2016/4/19 16:36	File folder
uninstall software	2016/4/19 16:36	File folder
win xp server2003 2008 2012 Vista 7 8 8.1 10 32-64bit	2016/4/19 16:36	File folder
win98 ME	2016/4/19 16:36	File folder
Date created: 2016/10/9 17:28 Size: 656 KB Folders: 232, 2232	2016/4/19 16:36	File folder
PocketPC 2003 ARM XScale Processor	2016/4/19 16:36	File folder
Windows CE 4.2-5.2 Mobile 5 6 PocketPC 2003 x86 Processor	2016/4/19 16:36	File folder
Windows CE 6.0 ARM XScale Processor	2016/4/19 16:36	File folder
Windows CE 6.0 x86 Processor	2016/4/19 16:36	File folder
Windows CE 2013	2016/4/19 16:36	File folder
LINUX README.txt	2016/4/19 16:36	Text Document

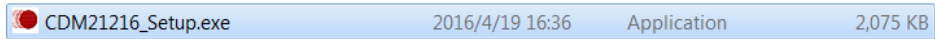
3. Choose the corresponding driver to your computer. Take win7 32bits as an example. Double click

win xp server2003 2008 2012 Vista 7 8 8.1 10 32-64bit	2016/4/19 16:36	File folder
---	-----------------	-------------

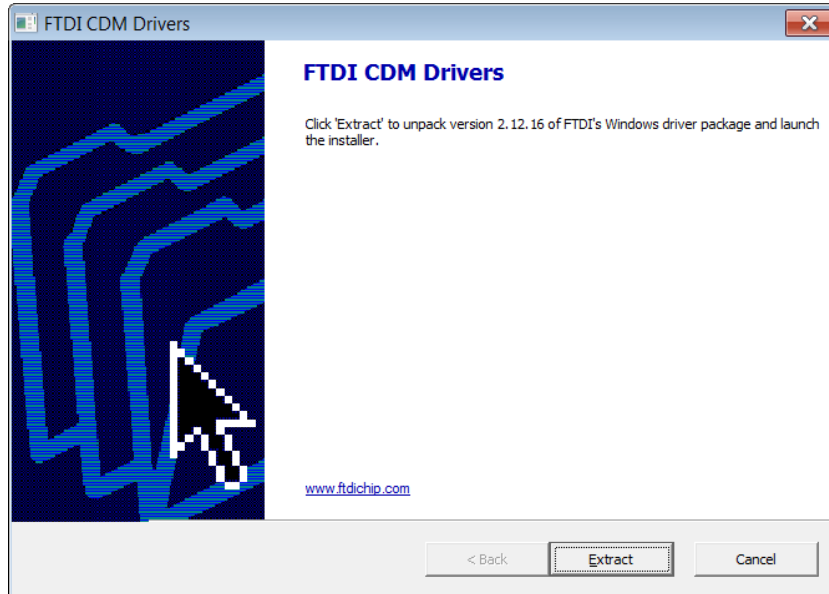
and it will show,

amd64	2016/4/19 16:36	File folder	
i386	2016/4/19 16:36	File folder	
Static	2016/4/19 16:36	File folder	
CDM 2 12 16 Release Info.rtf	2016/4/19 16:36	RTF 格式	216 KB
CDM v2.12.16 WHQL Certified.zip	2016/4/19 16:36	好压 ZIP 压缩文件	1,322 KB
CDM21216_Setup.exe	2016/4/19 16:36	Application	2,075 KB
CDM21216_Setup.rar	2016/4/19 16:36	好压 RAR 压缩文件	2,021 KB
ftd2xx.h	2016/4/19 16:36	H File	40 KB
ftdibus.cat	2016/4/19 16:36	Security Catalog	15 KB
ftdibus.inf	2016/4/19 16:36	Setup Information	18 KB
ftdiport.cat	2016/4/19 16:36	Security Catalog	14 KB
ftdiport.inf	2016/4/19 16:36	Setup Information	15 KB

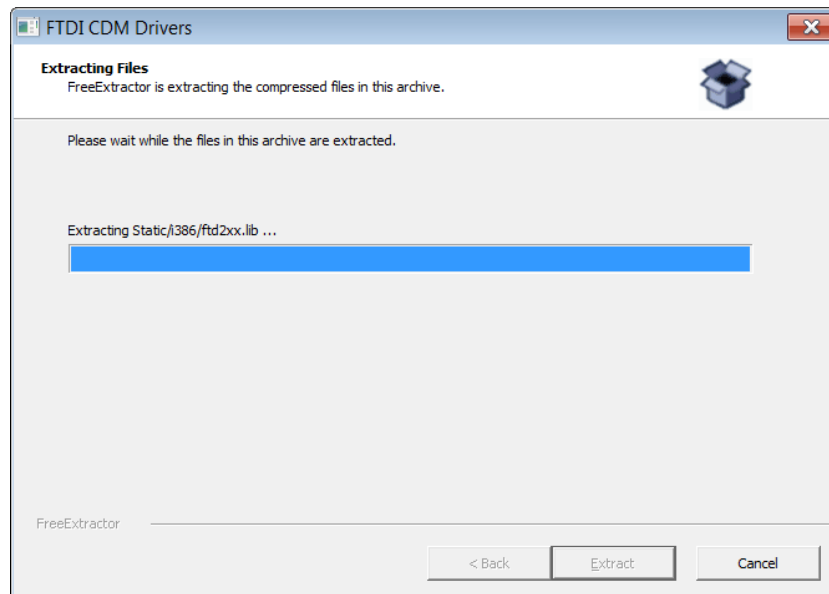
4. Double click



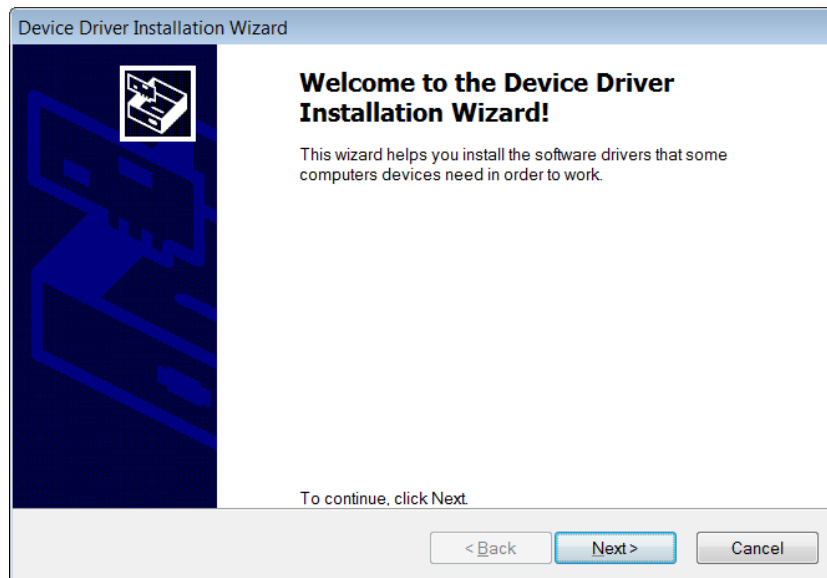
5. The installation starts as follows. Click 'Extract'



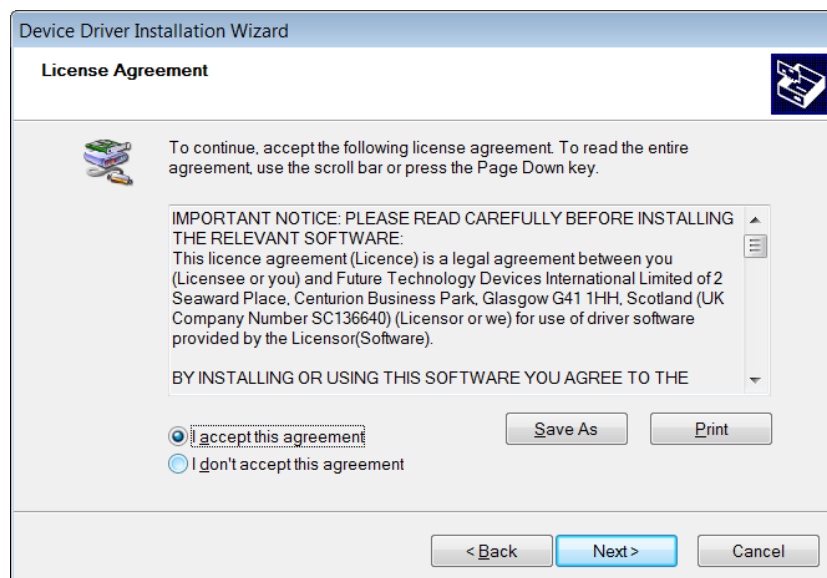
6. Driver installation is under progress



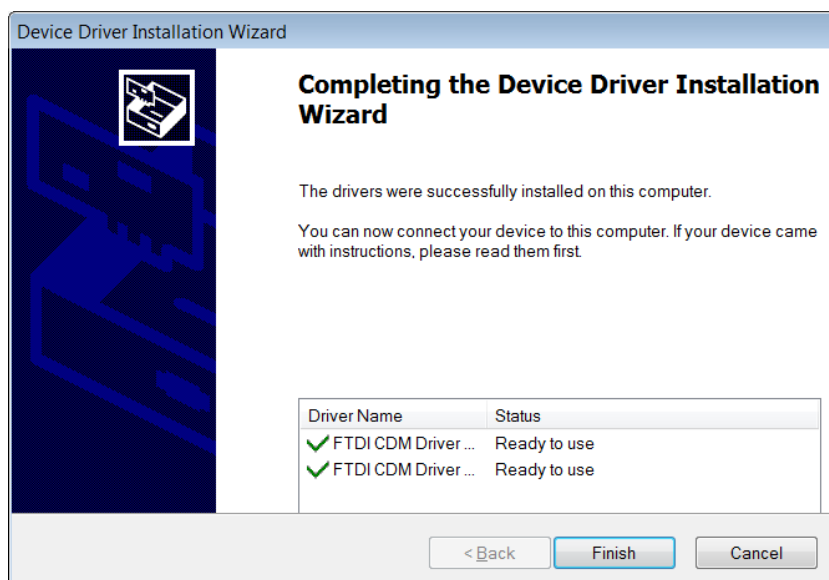
7. Click 'Next'



8. Click  I accept this agreement and 'Next'

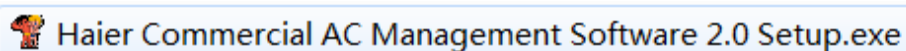


9. Click 'Finish' after finished

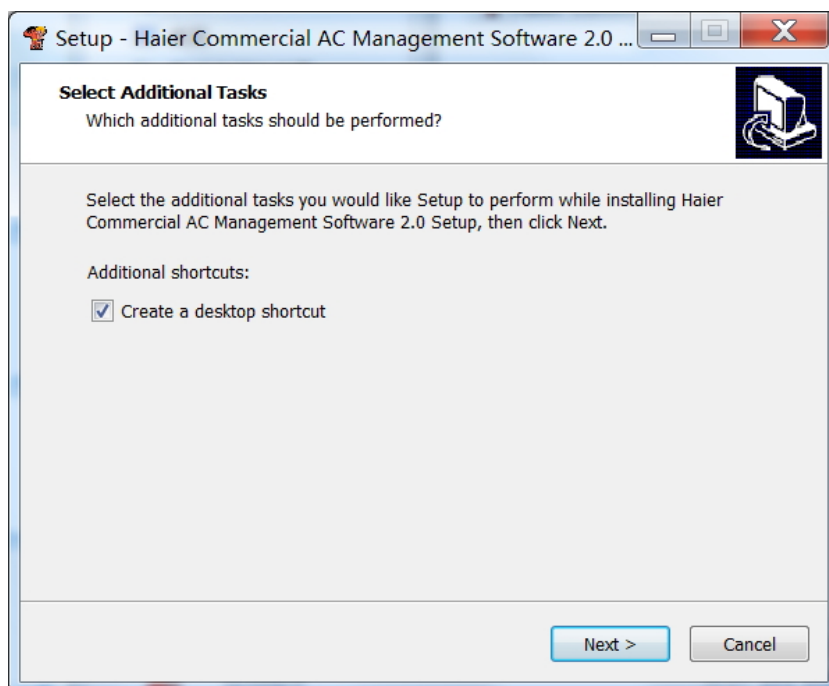


## Management software installation and start

1. Management software installation

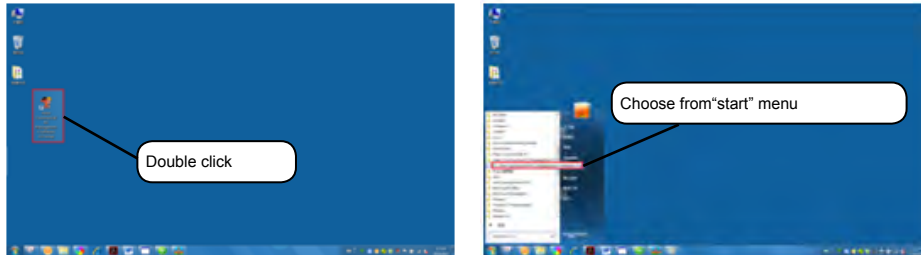


Double click to start installation, then press next step until finishing installation.



## 2. Start

Double click “Haier Commercial AC Management Software 2.0” icon on the desktop, or choose “Haier Commercial AC Management Software 2.0” from “start” menu.



It is required to register for the first time running.

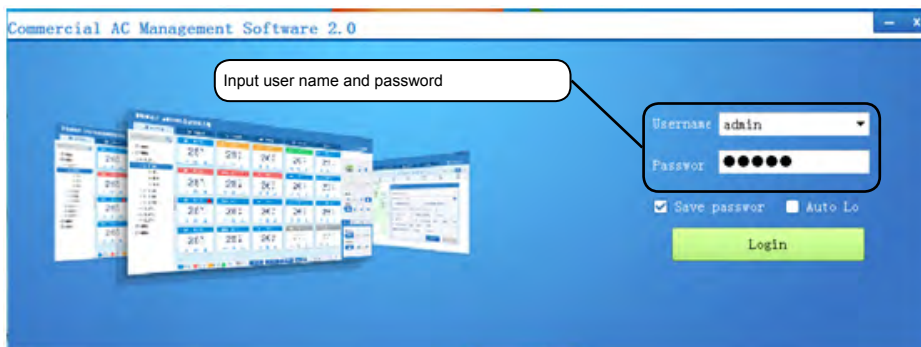


Click “Generate SN”, to generate the SN code, and send SN code to Haier technician to get “lisense.dat”. After getting “lisense.dat”, copy it to installation directory to cover the previous “lisense.dat”. Close the software and then reopen it, and the software will work properly.

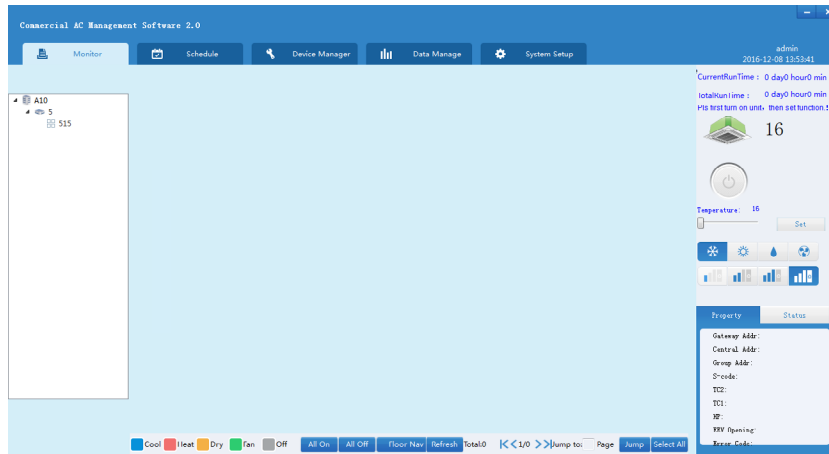
Input user name and password in the prompt login window.

User name: admin(default)

Password: 12345(default)



After inputting user name and password, click “login” to enter main interface, as shown in following picture.

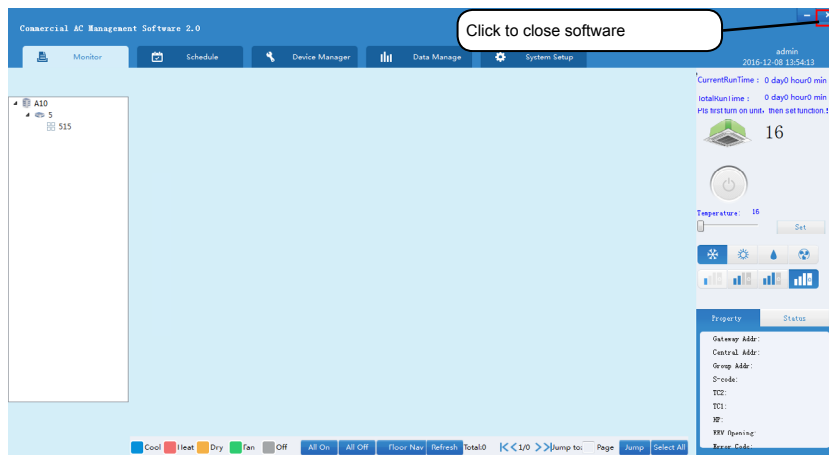


### 3. Stop the software

When turn off computer power, two steps are needed:

- ① exit “Haier Commercial AC Management Software 2.0”
- ② exit Windows

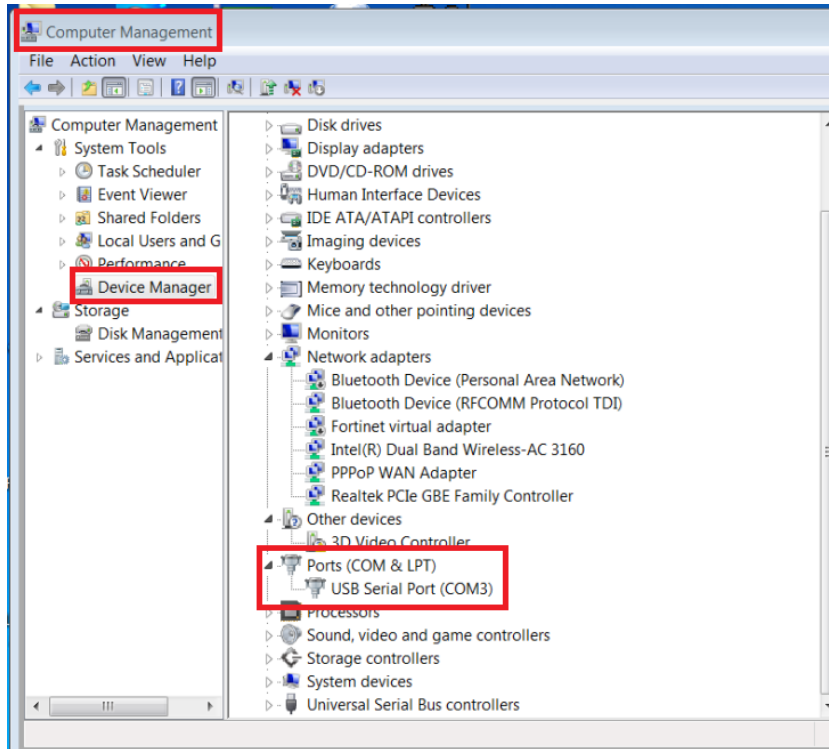
When exiting “Haier Commercial AC Management Software 2.0”, click “X” on the top right corner on the main interface and then exit Windows.





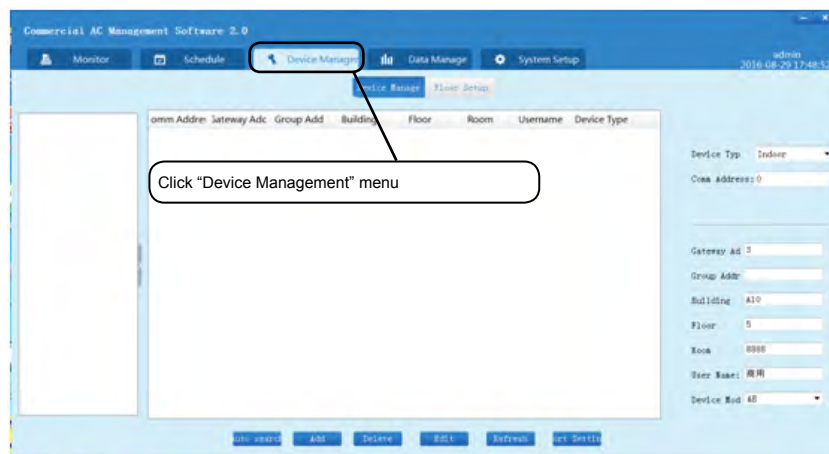
## Communication port setting

1. Set port No. according to the actual connected port. Check the actual port No. from Computer Management-Device Manager.

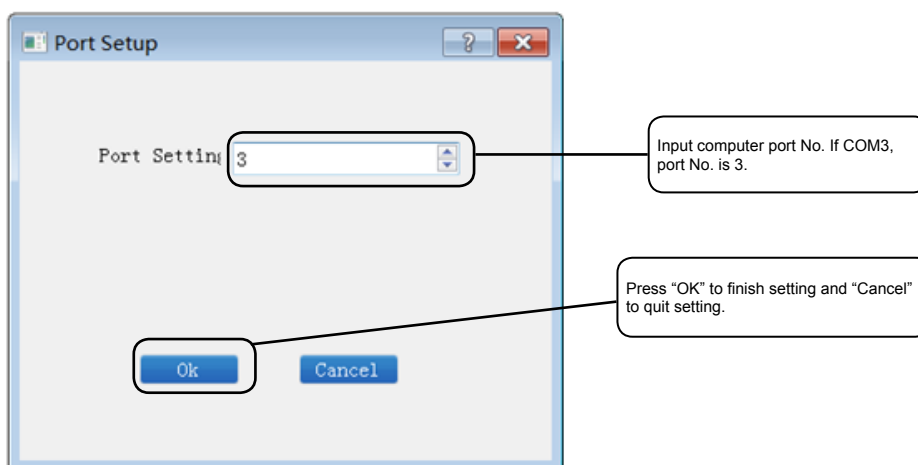


As shown in above picture, the port connected is COM3 and port No. is accordingly 3.

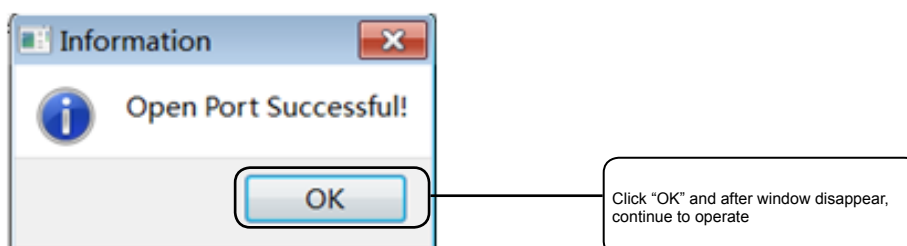
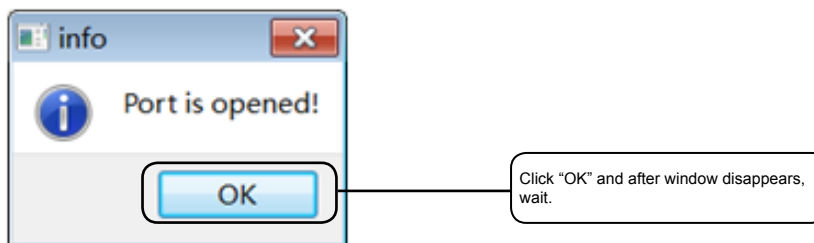
2. Click "Device Management" menu



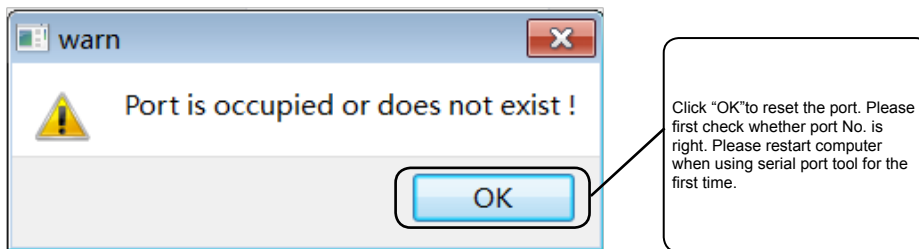
3. Click “Port Setting” on the bottom right



4. Input port No. into the dialog box. For example, if COM3, input “3”. Click “OK” and it will pop out a new dialog box indicating serial port is open. Click “OK” and after 3s, it will Pop out a dialog box indicating serial port open successfully. Click “OK” to finish port setting.



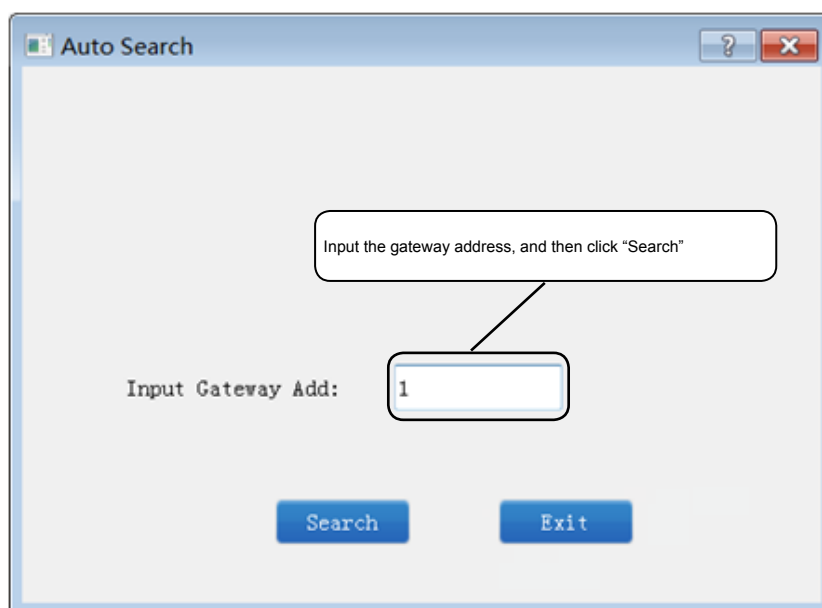
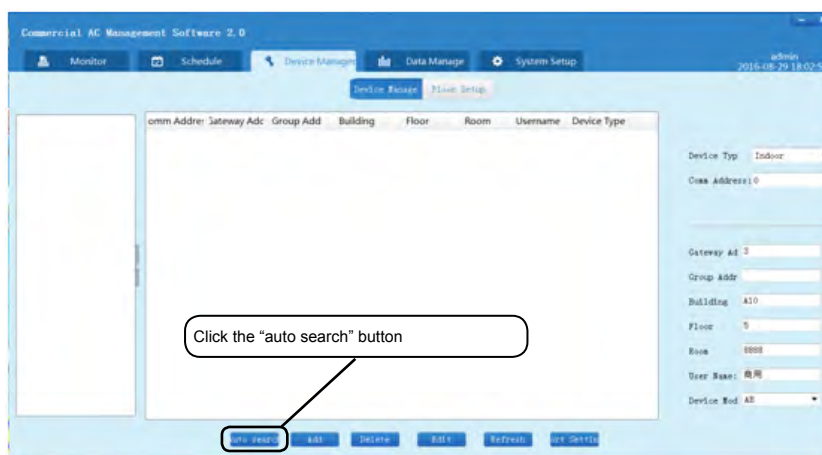
5. If port setting is wrong, it will pop out a warning... window indicating this port is occupied or does not exist. Please set again



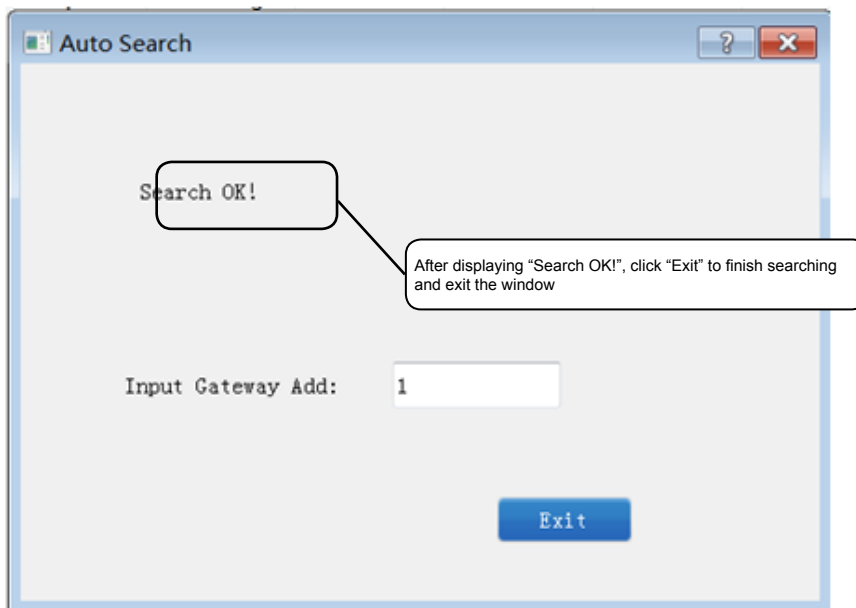
## Adding/deleting device

1. Adding device by auto searching

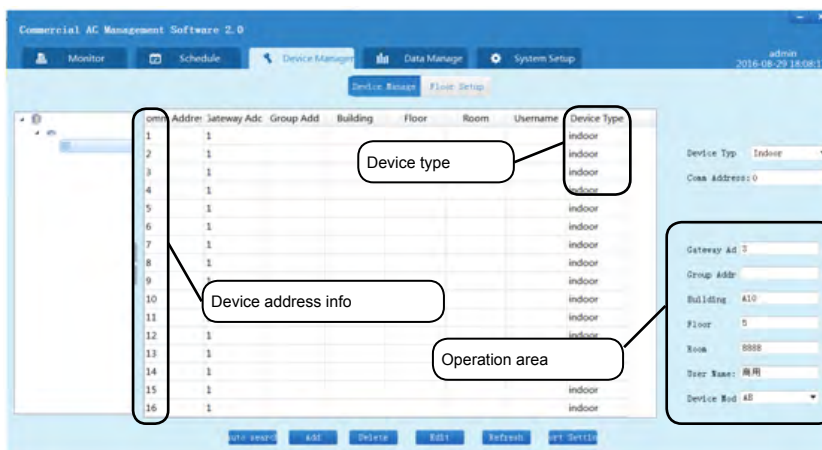
(a) Click "auto search"



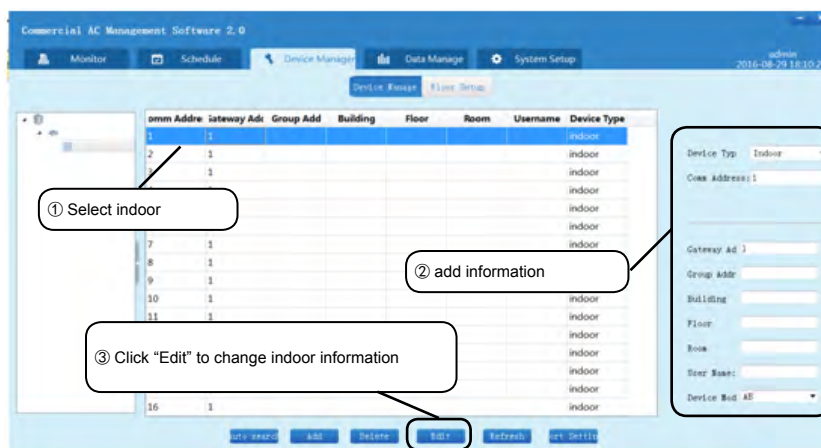
(b) Input converter– the gateway address (from 0 to 31) into the popping-out dialog box, and then click "search". After finishing searching, it will pop out "Search OK!", and then click "Exit" to ... close the dialog box.



(c) The searched indoor information shown in the device management list is: Communication address, gateway address and device type. Other information needs to add from the list on the right hand.



(d) Indoor information adding.  
Click the indoor that needs to add information from the device list.



Device Typ Indoor

Comm Address: 1

Gateway Ad 1

Group Addr 0

Building A10

Floor 5

Room 511

User Name: Haier

Device Mod AB

When manually adding new device, it is required to manually input model/indoor address/gateway address. When changing the already existed device's information, indoor address and gateway address can not be changed.

If this shows vacant or 0, it indicates this is master indoor in wired group controlling, while 1-15 are slave addresses. Slave indoors cannot be controlled

User defined AC location

User defined AC name

Indoor model (duct, wall, cassette, convertible)

### Indoor information adding:

Group address: when using wired controller to control more than one indoor, master address is 0 and slave addresses are from 1 to 15.

Building: in which building the indoor unit is installed.

Floor: on which floor the indoor unit is installed.

Room: in which room the indoor unit is installed.

User name: the user of indoor.

Model: indoor model : AB: Cassette; AC: Convertible; AD: duct; AS: Wall

(e) Click "Edit" to finish the ... adding information, it will update indoor information in the indoor list, and the relevant building, floor and room will be shown in the left structure.

Commercial AC Management Software 2.0

Monitor Schedule Device Manager Data Manage System Setup

2016-08-29 16:14:14

ID	Group Addr	Building	Floor	Room	Device Type
1	1				indoor
2	1				indoor
3	1				indoor
4	1				indoor
5	1				indoor
6	1				indoor
7	1				indoor
8	1				indoor
9	1				indoor
10	1				indoor
11	1				indoor
12	1				indoor
13	1				indoor
14	1				indoor
15	1				indoor
16	1				indoor

The newly added building, floor and room will be shown in left list

The edited indoor unit will disappear from current list

Device Typ Indoor

Comm Address: 1

Gateway Ad 1

Group Addr 0

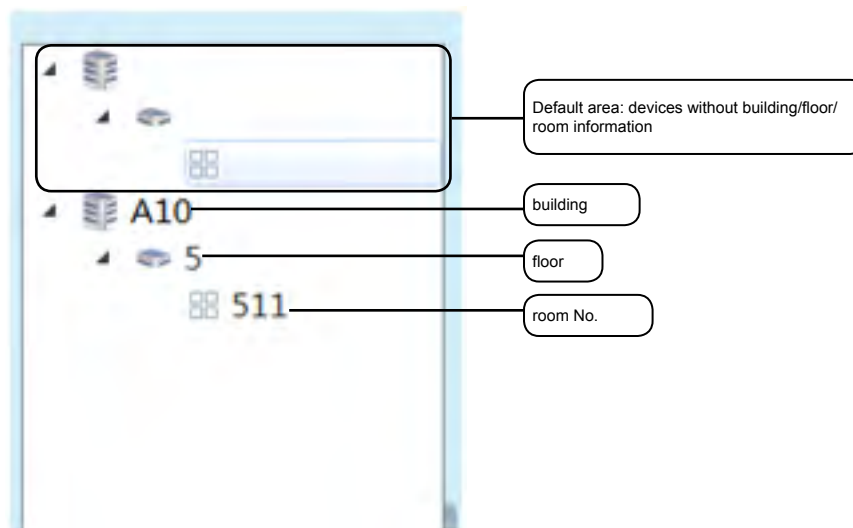
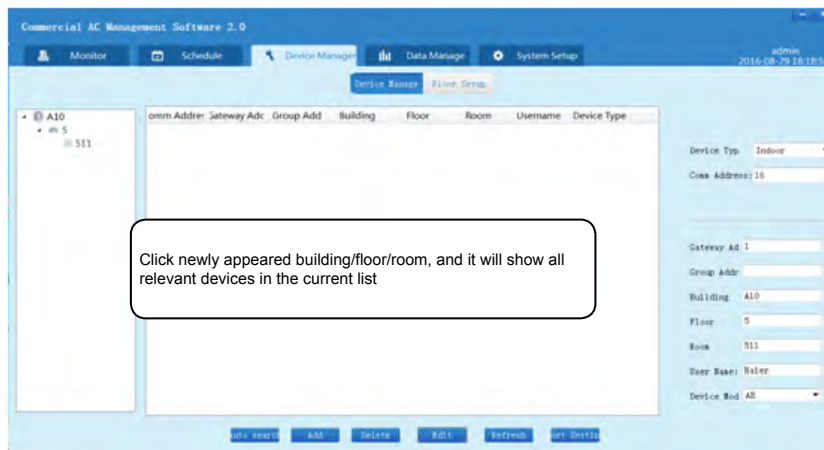
Building A10

Floor 5

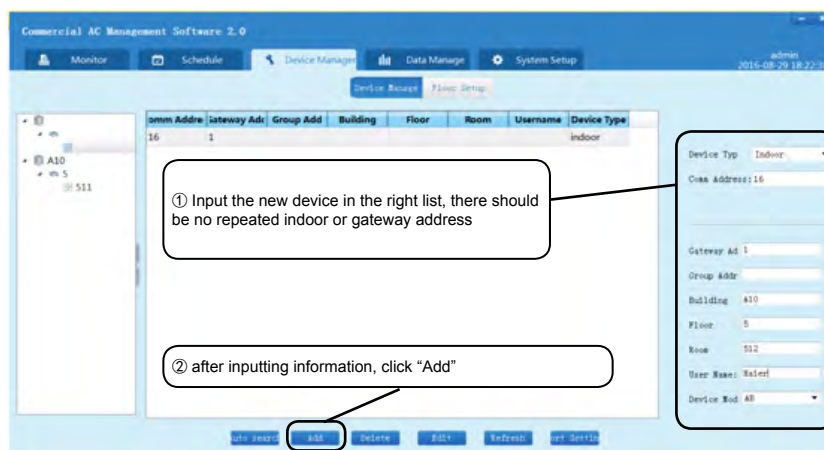
Room 511

User Name: Haier

Device Mod AB

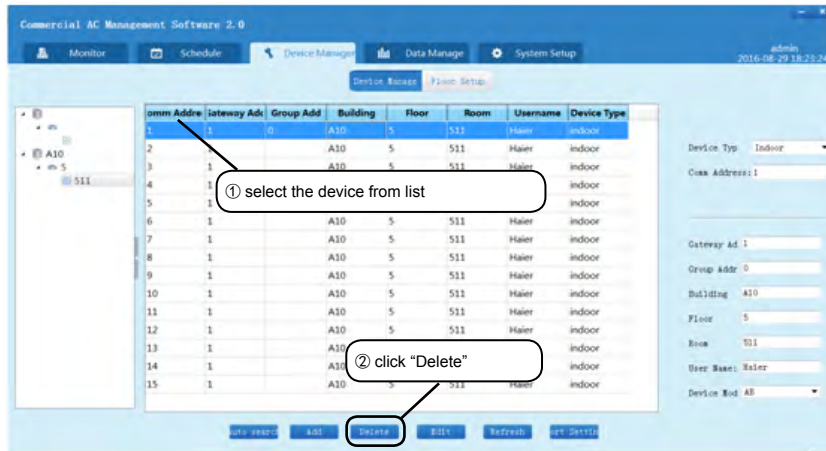


## 2. Manually adding



- Add indoor information in the right list, and there should be no repeated indoor or gateway address.
- Click "Add" to finish adding.
- After adding, it will display newly added indoor information in the list. Restart the software to confirm the setting.

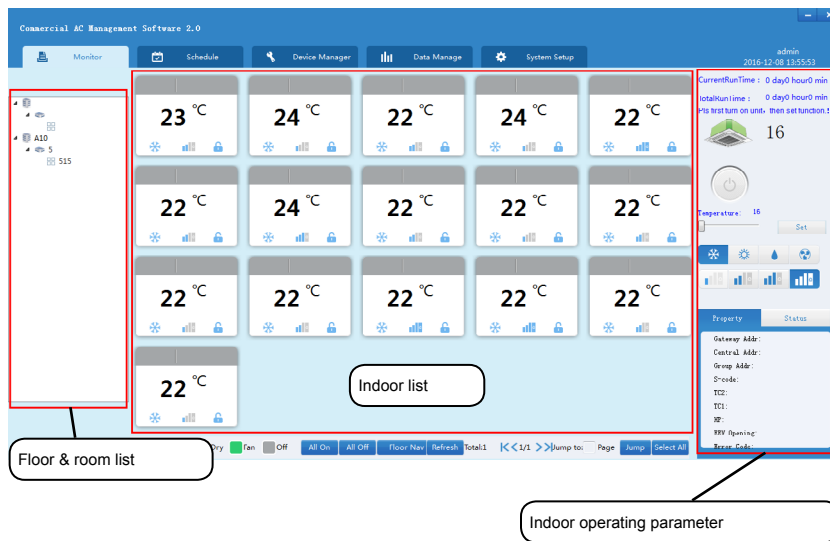
### 3. Deleting device



- Select the intended deleting device from list.
- Click “Delete” to finish deleting.

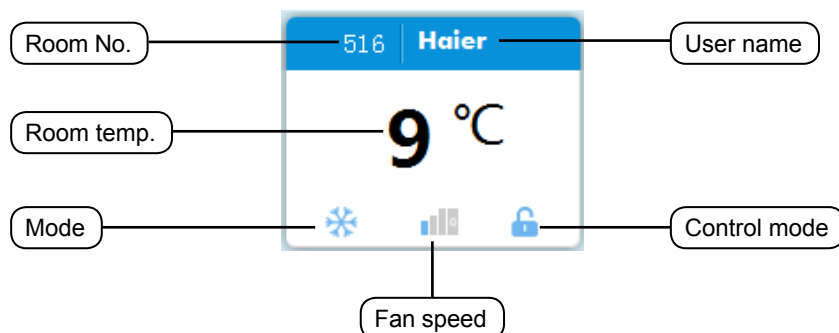
### Device monitoring

- After adding device, click “Monitor ” to monitor indoor.

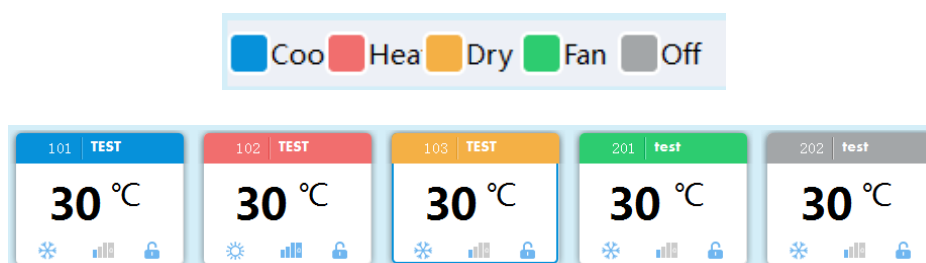


## 1. Indoor's working condition

Every icon shows current condition of indoor, as shown in following picture:



(a) Different color shows different mode

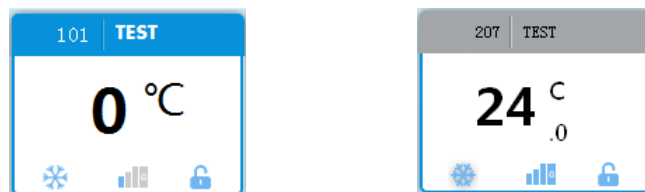


The above condition and mode are: cooling, heating, dry, fan, off;

(b) Click indoor window can select indoor. After selected, edge of window will be shown by solid line; Indoor not selected (in ON mode). Indoor not selected (in OFF mode).



Indoor selected (in ON mode) Indoor selected (in OFF mode)





## 2. Indoor detailed condition

The screenshot displays a multi-section user interface for an indoor climate control system. At the top, a statistics section shows 'CurrentRunTime : 0 day0 hour0 min' and 'TotalRunTime : 0 day0 hour0 min', with a callout 'Running time statistics'. Below this is a main control area showing a temperature of '16' with a callout 'control interface'. This area includes a power button, a temperature slider, and a 'Set' button. Below the slider are four mode icons: a snowflake (cooling), a sun (heating), a water drop (dehumidification), and a fan (fan mode). At the bottom, a 'Property and Status' section has two tabs: 'Property' (selected) and 'Status'. The 'Property' tab lists: Gateway Addr:, Central Addr:, Group Addr:, S-code:, TC2:, TC1:, HP:, EEV Opening:, and Error Code:.

CurrentRunTime : 0 day0 hour0 min  
TotalRunTime : 0 day0 hour0 min  
Pls first turn on unit, then set function.!

16

Temperature: 16

Set

Property Status

Gateway Addr:  
Central Addr:  
Group Addr:  
S-code:  
TC2:  
TC1:  
HP:  
EEV Opening:  
Error Code:

Running time statistics

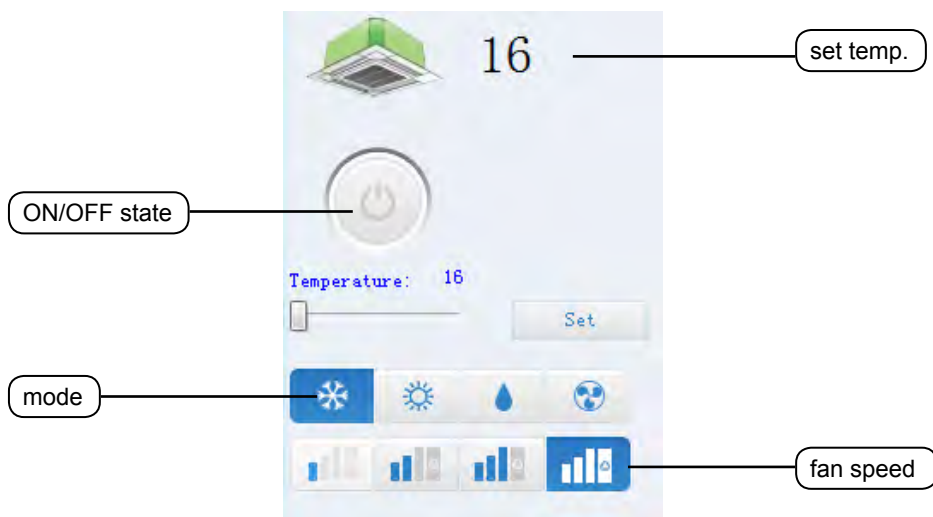
control interface

Property and Status

### 3. Indoor control

#### (a) Single unit control

After selecting one indoor, all setting information of indoor will be shown on the right, and indoor control can be operated here

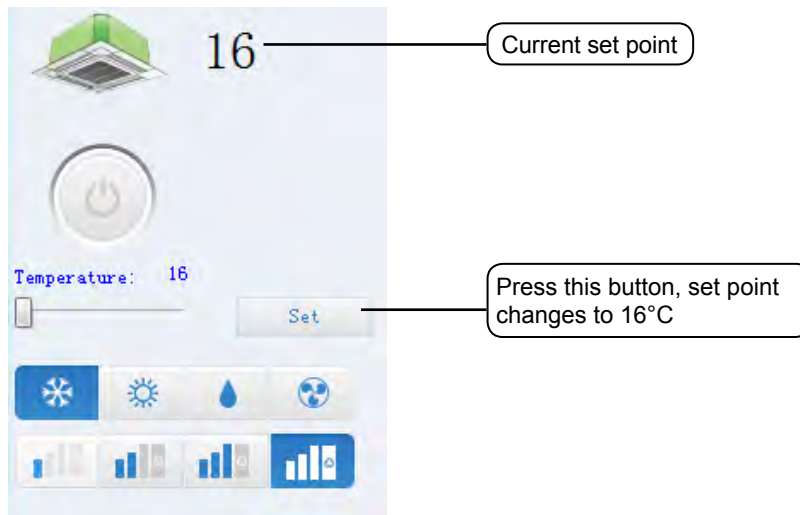


The detailed explanation of each button.

Button	Explanation
	ON
	OFF
	COOL
	HEAT
	DRY
	FAN

Button	Explanation
	LOW
	MID
	HIGH
	AUTO
	SET TEMPERATURE

Status of below indoor unit is: ON, Set temp. is 24°C, cool, low speed.  
Press 'Set' button to change set point to 16°C

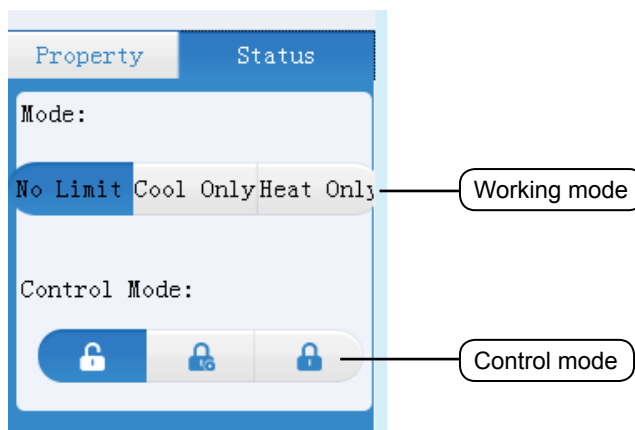


**(b) Working mode/Control mode**

Working mode and control mode are displayed under “status” label

Working mode: No Limit, Cool Only, HeatOnly;

Control mode: Last in first out, central control, Lock;





**Working mode:**


No limit: All the working mode is available

Cool only: Indoor can only operate in cooling mode. No other mode is allowed to be set

Heat only: Indoor can only operate in heating mode. No other mode is allowed to be set

Last in first out  : The last input order is executed, no matter it is from HCM-01, wired controller or remote controller, for example, low speed is sent from HCM-01 first, then high speed is sent from wired controller, unit works at high speed;

Central control  : only available by HCM-01, wired controller or remote controller can only switch on or switch off indoor unit;

Lock  : all orders can only be sent by HCM-01, wired controller or remote controller can only display the working condition.

**(c) Multi indoor units control**

To control several indoor units, please follow the steps listed below follow below steps:

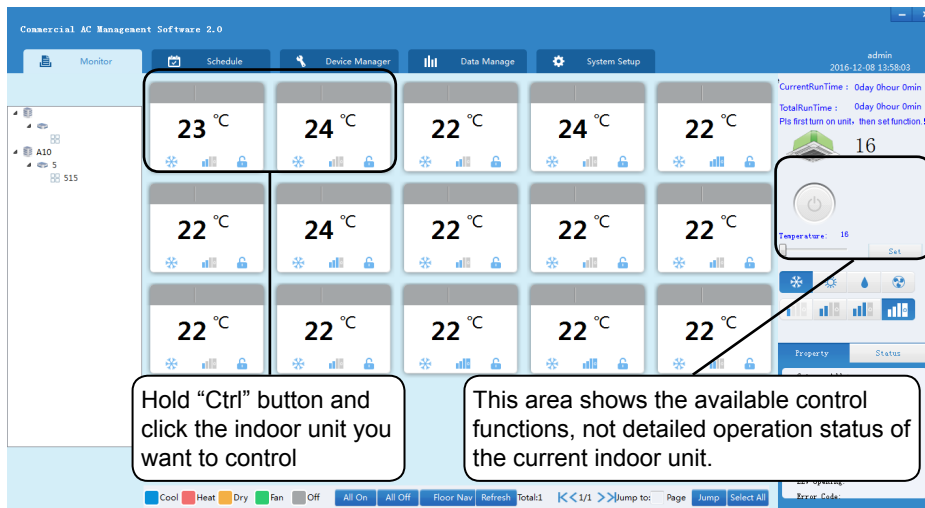
Hold “Ctrl” button and click the indoor unit you want to control;

Press ON/OFF button to switch on/off indoor unit;

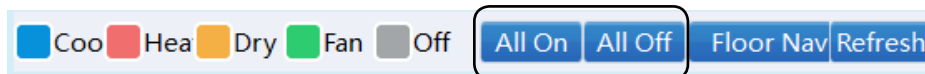
Drag the slider to set temperature;

Click the fan speed you want to set;

Click the working mode you want to set;



**(d) All on/off**

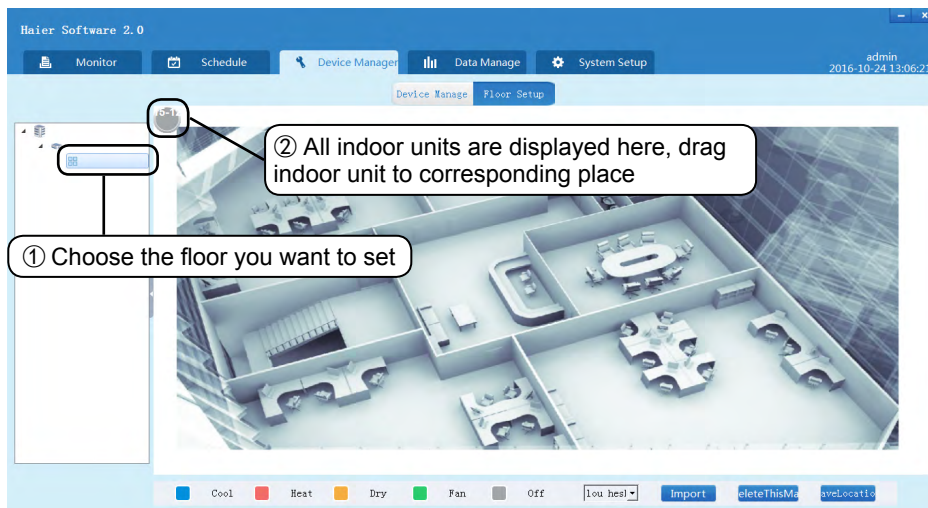
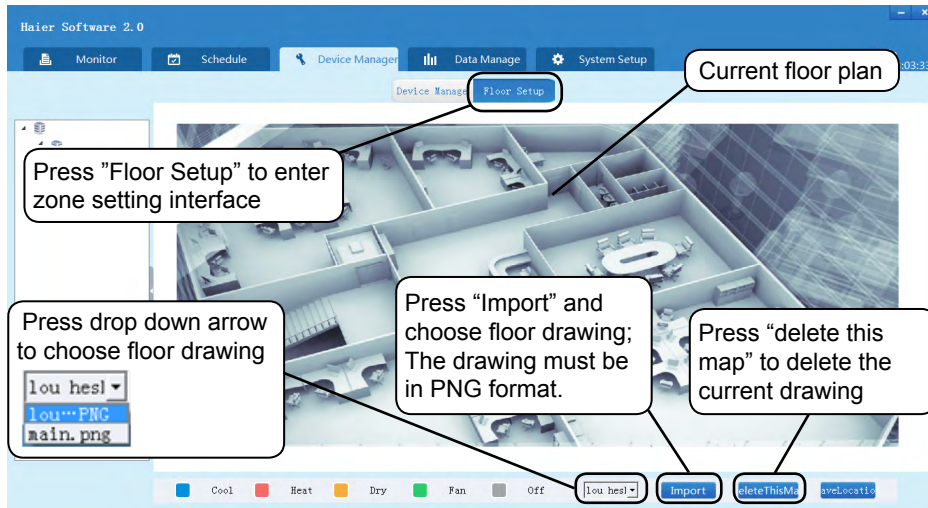


Press “All On” to switch on all indoor units

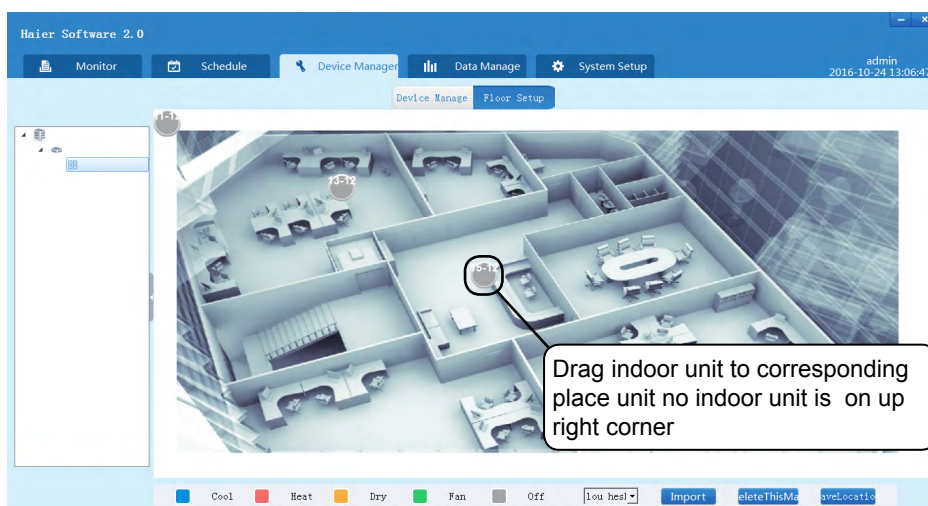
Press “All Off” to switch off all indoor units

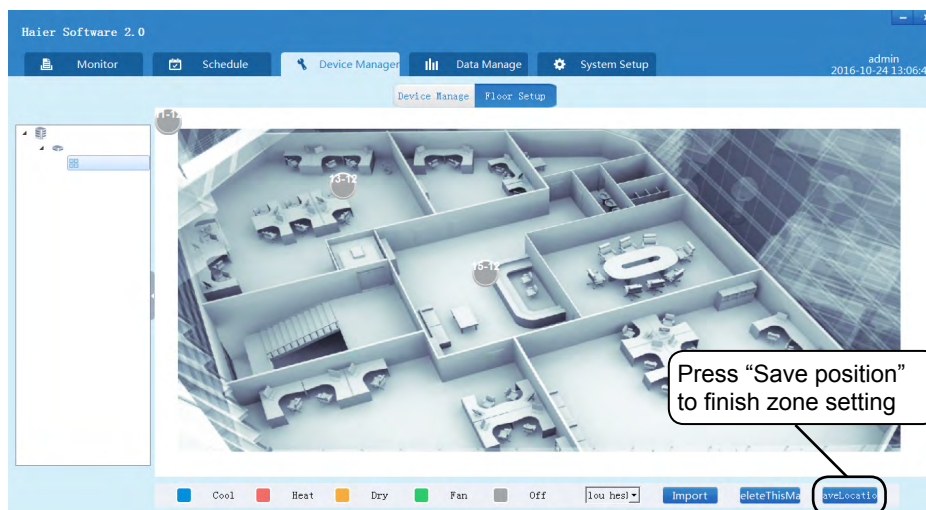
## Floor setting

### 1. Zone setting

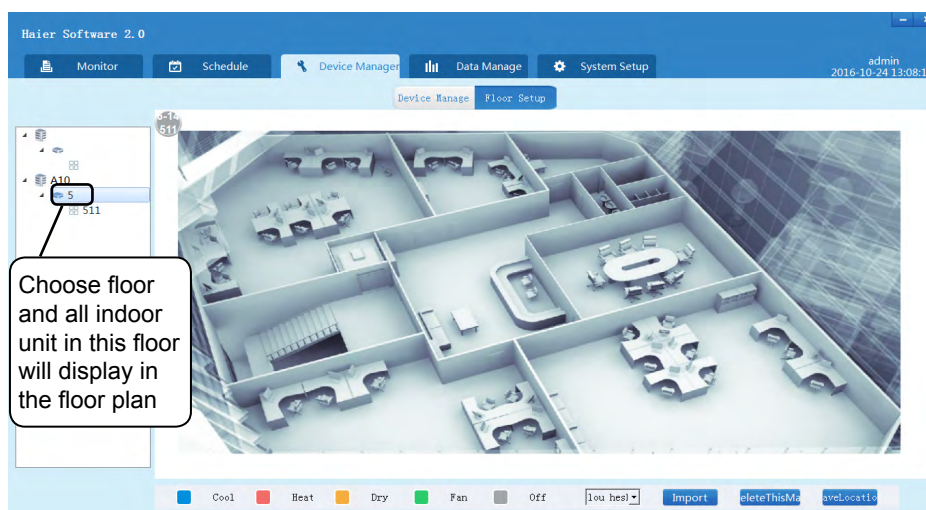
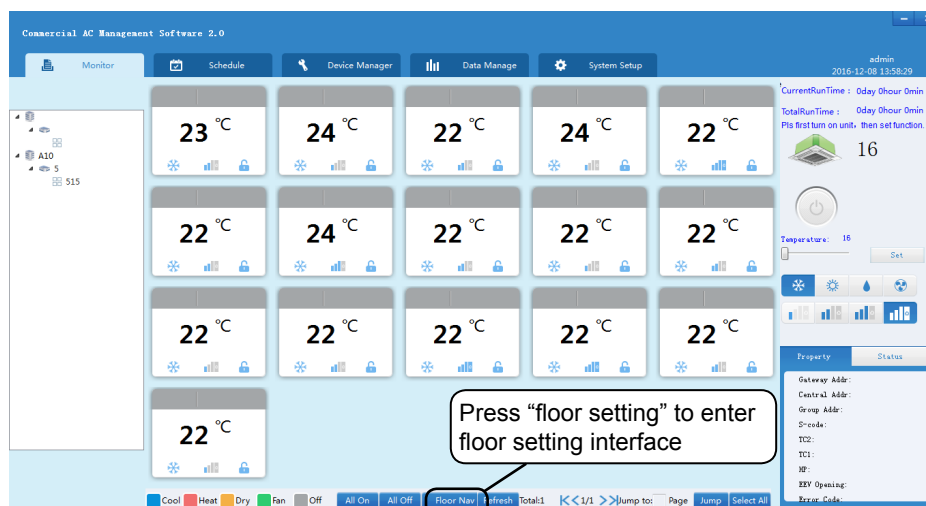


: 1-2 stands for No1 indoor unit connected to No2 IGU02, 516 is room number.





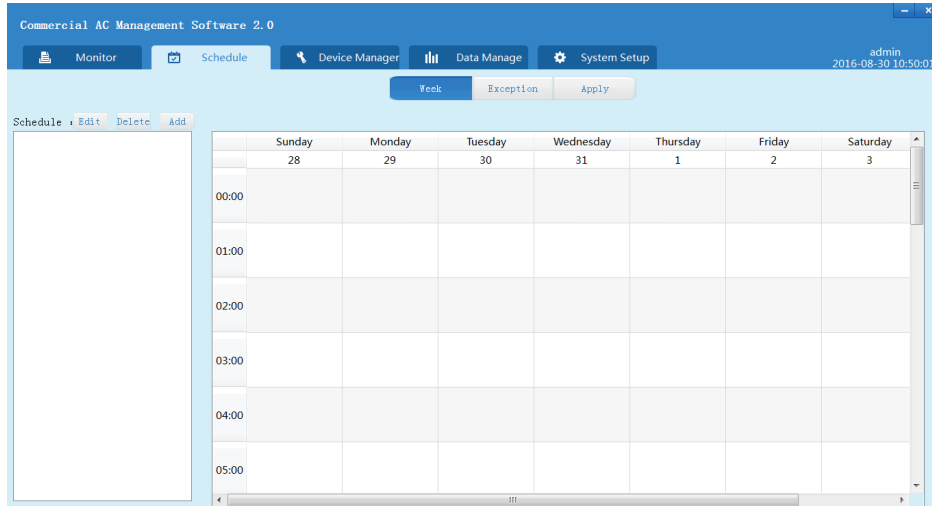
## 2. Floor setting



Remark: Different floor plan can be used for different floor

## Schedule setting

Press “Schedule setting” in main page to enter schedule setting;

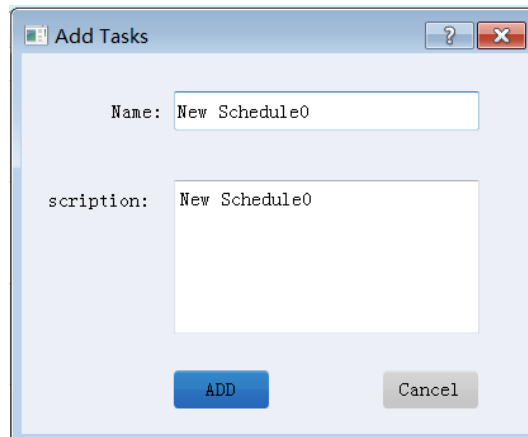


### 1. Weekly schedule

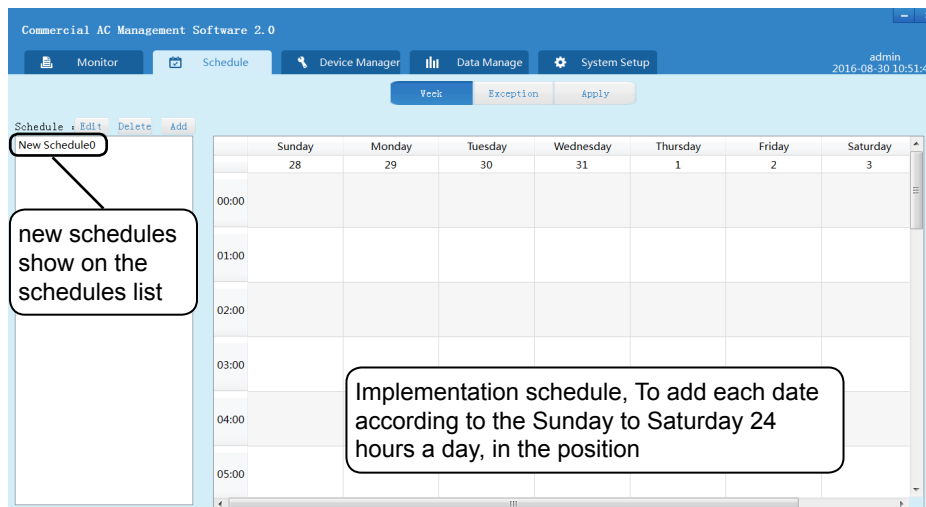
① Press “Add”



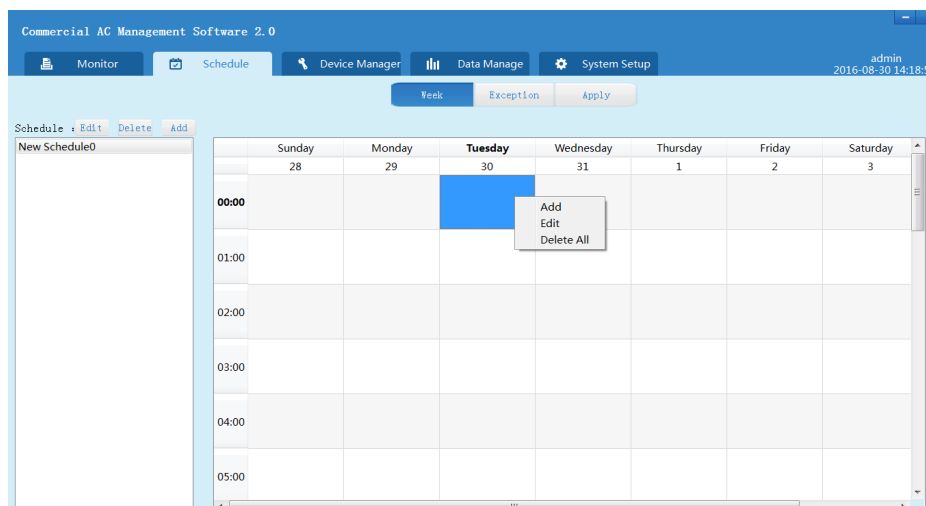
② A dialog box pops out, input schedule name, or input description;



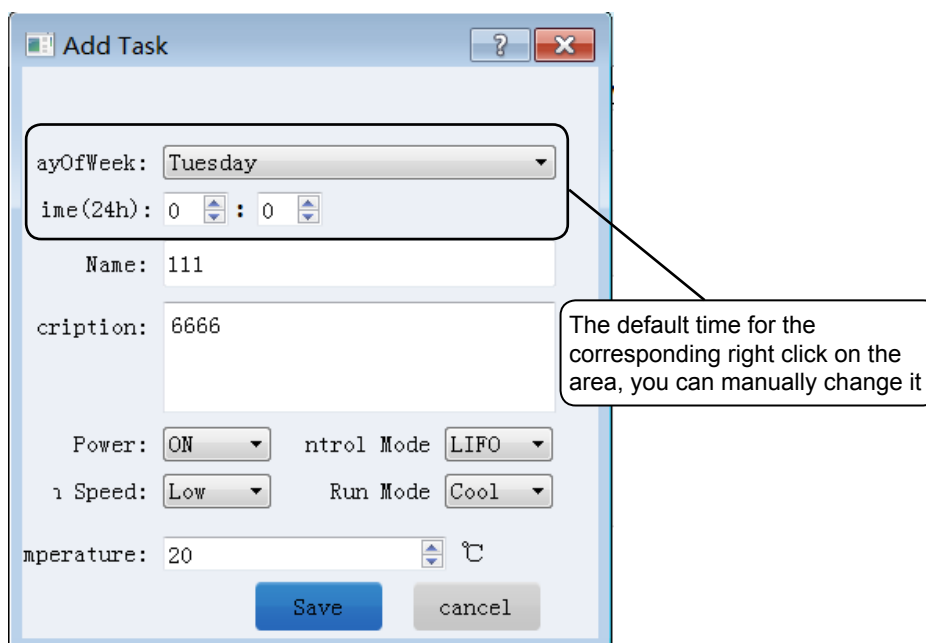
③ Press “ADD” button to create new schedule;



④ Into “ new schedules”, right click “Implementation schedule area”, popup menu

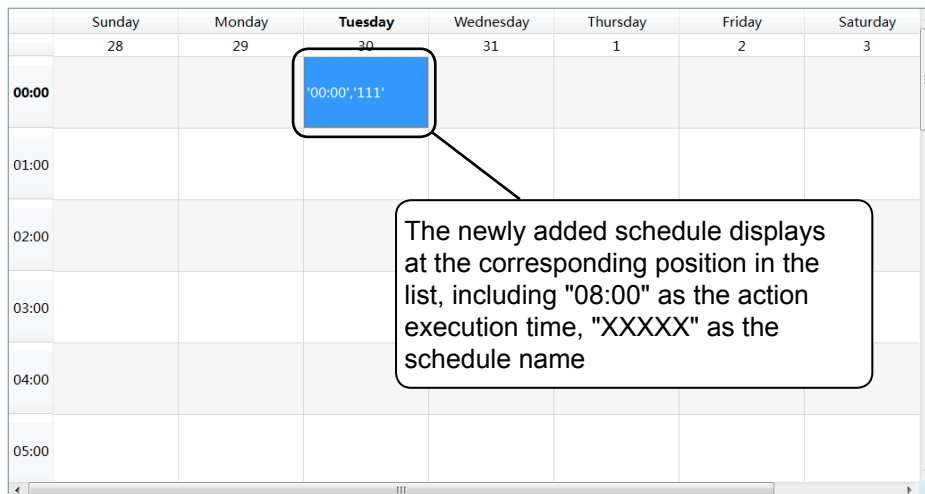


⑤ Click “Add”, popup menu



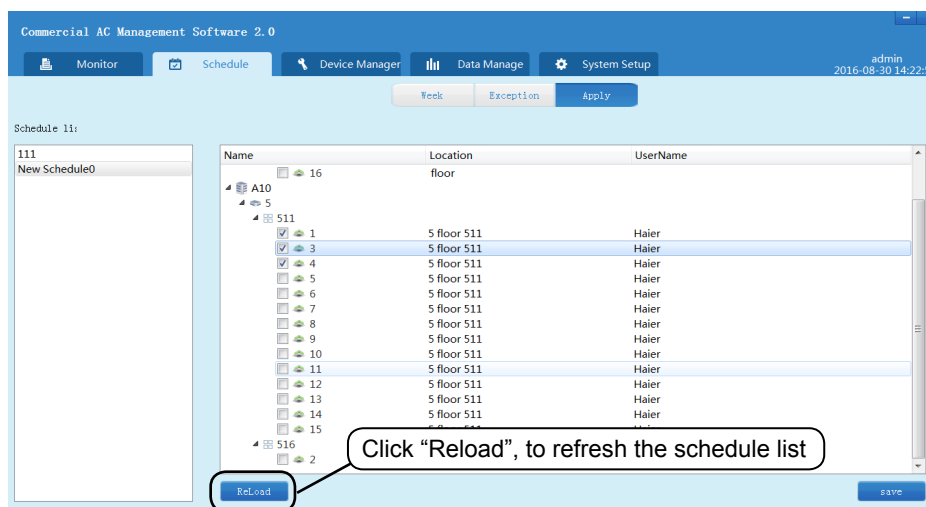


To set schedule execution time, and switches, control model, temperature, fan speed, operation model set, enter a name and description, set after the completion of the click on "save".

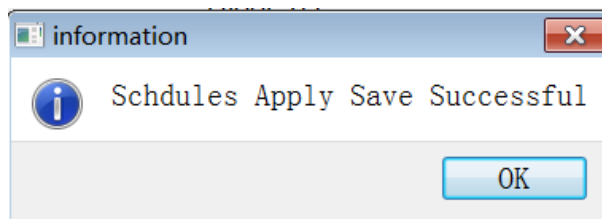


Back to the Schedule setting interface, you can see in the corresponding time position shows that the execution time and name of the new schedule is set. Repeat this action to add new schedules.

⑥ In the "Apply" interface, you can select schedule from schedule list on the left and select indoor unit from the list on the right side



Click "save", popping a prompt dialog box. Click "OK" and the indoor units selected will execute the selected schedule. Uncheck the indoor and save will cancel the schedule.

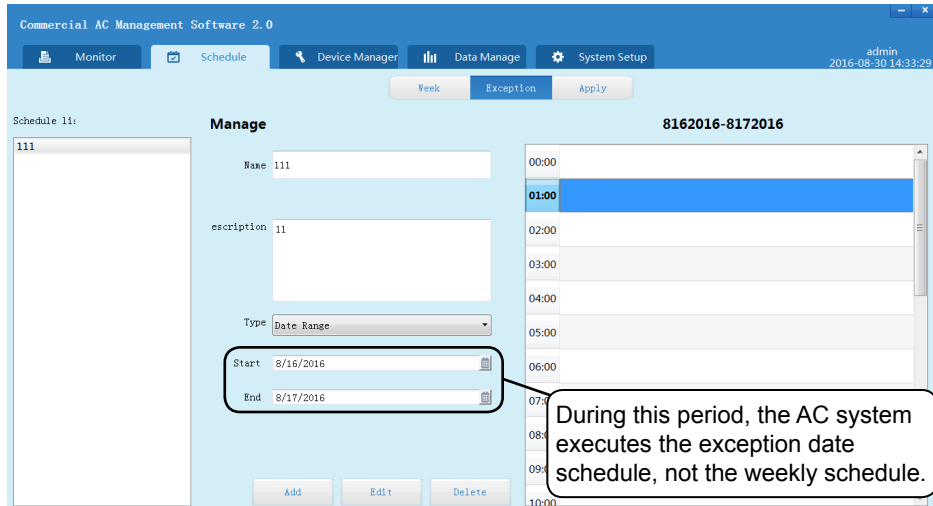


## 2. Exception date

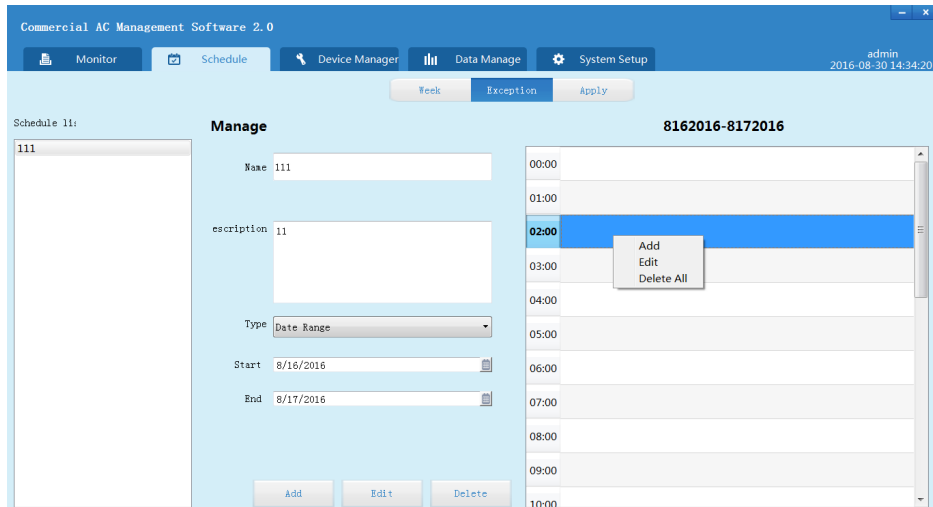
Exception date schedule means the AC system will execute a special schedule which does not follow the already-set weekly schedule.

Steps:

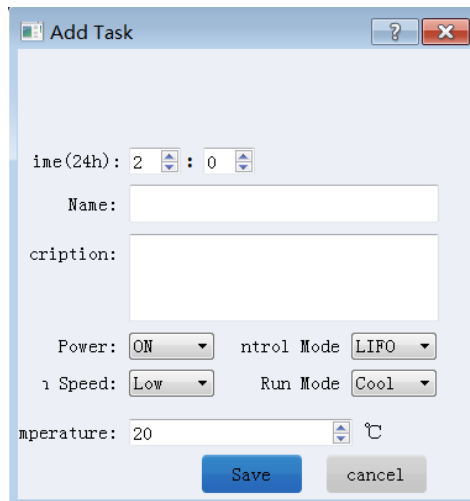
Click "Exception" icon, enter the name and description and select the application time range.



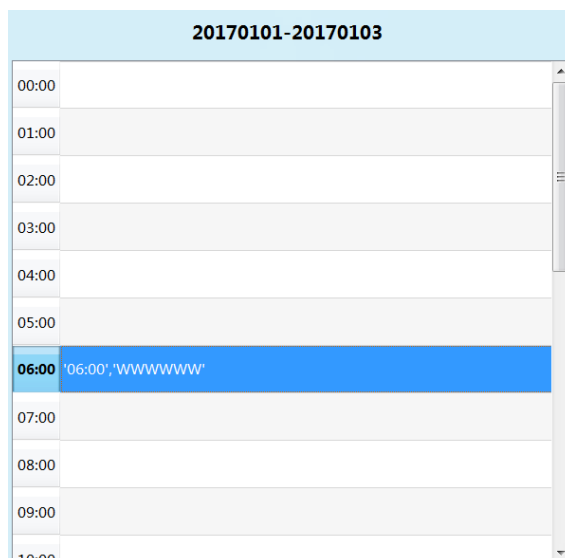
① Click "Add" to add new schedule. Right click in the time table will pop-up a dialog.



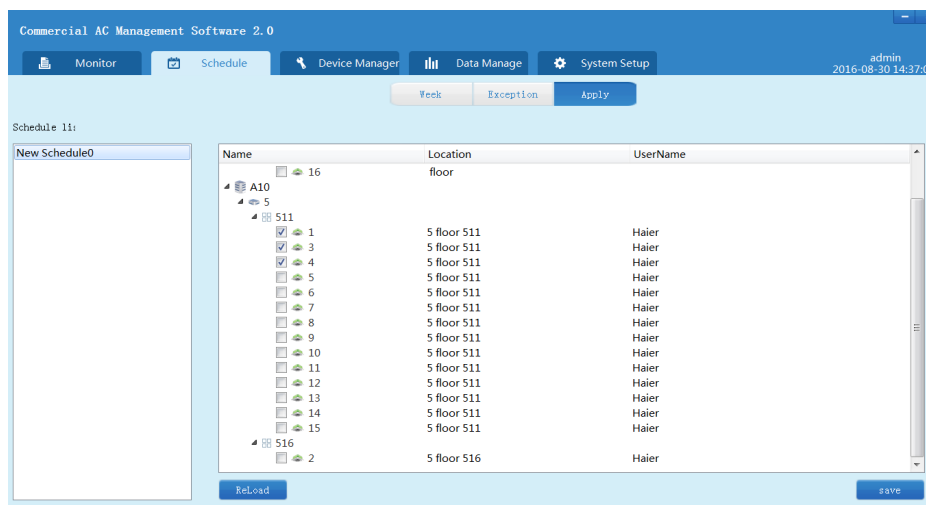
② Click "add".



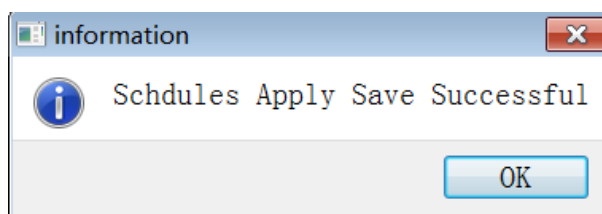
Set the execution time, On/Off, control mode, fan, operation mode, set temperature and schedule name and description. Click “Save” to save the setting. Back to the Schedule setting interface, in the corresponding time position shows the new schedule. Repeat this action to add new schedules.



③ In the “Apply” interface,, you can select schedule from schedule list on the left and select indoor unit from the list on the right side



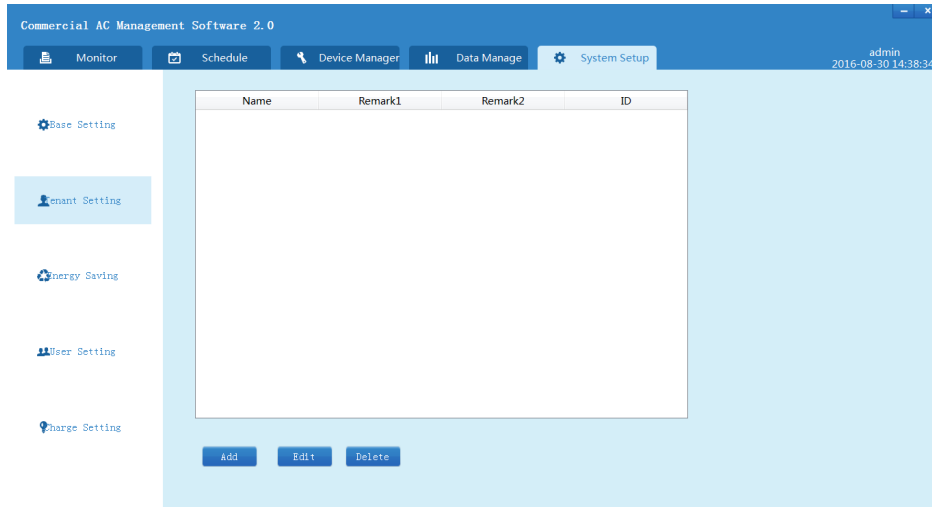
Click "save", popping a prompt dialog box. Click “OK” and the indoor units selected will execute the selected schedule. Uncheck the indoor and save will cancel the schedule.



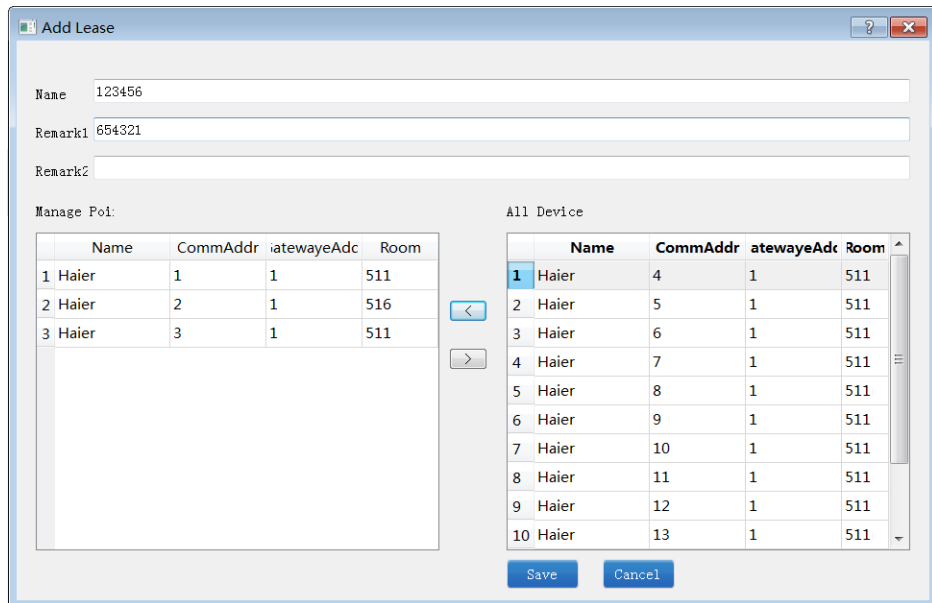
## Data management

Tenant setting and electricity information setting are required before the data management.

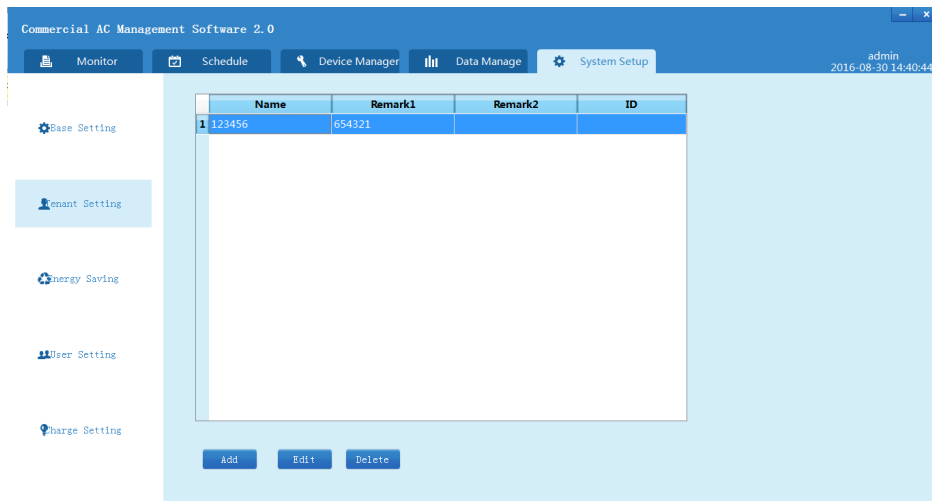
## 8.1 Tenant setting



Click “Add” and then pop-up a dialog box. Input the name and remarks and add the devices from the “All Device” table to the “Manage Point” table.



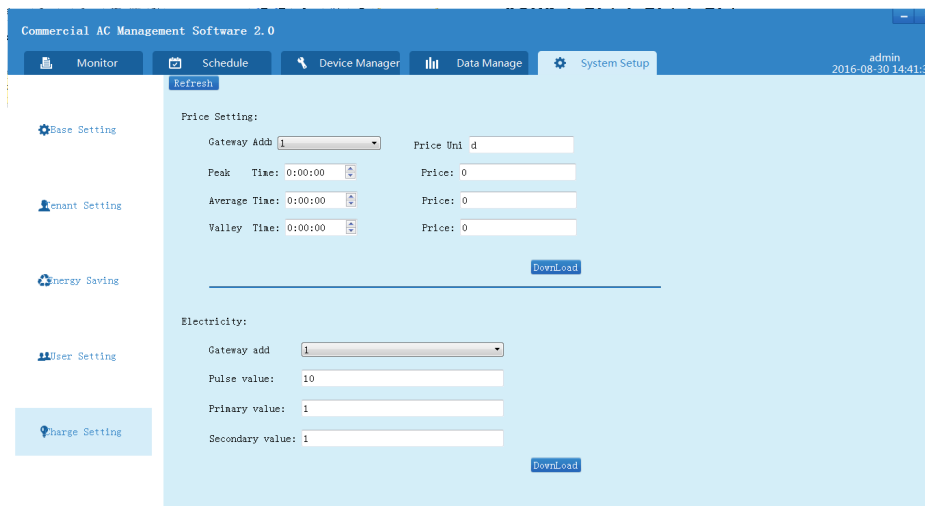
Click “Save” to finish the tenant setting. The newly added tenant account will be shown in the Tenant Setting table. The accounts can be edited or deleted.



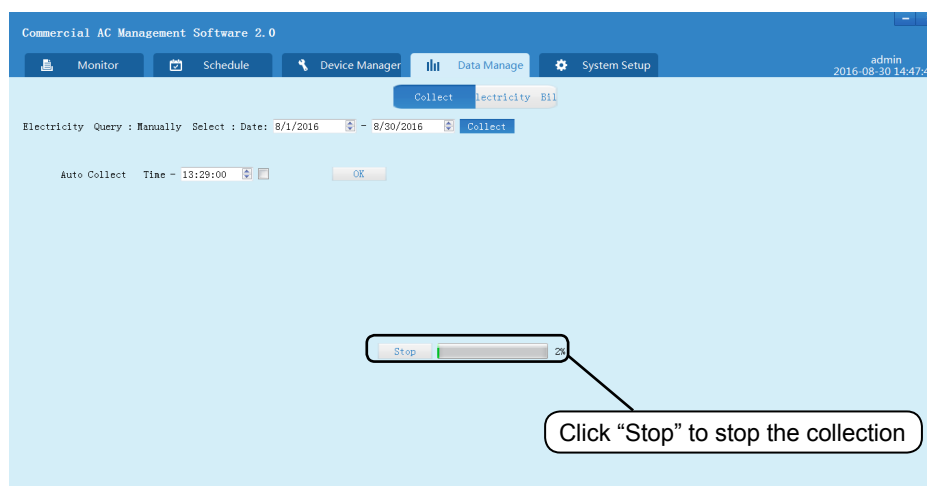
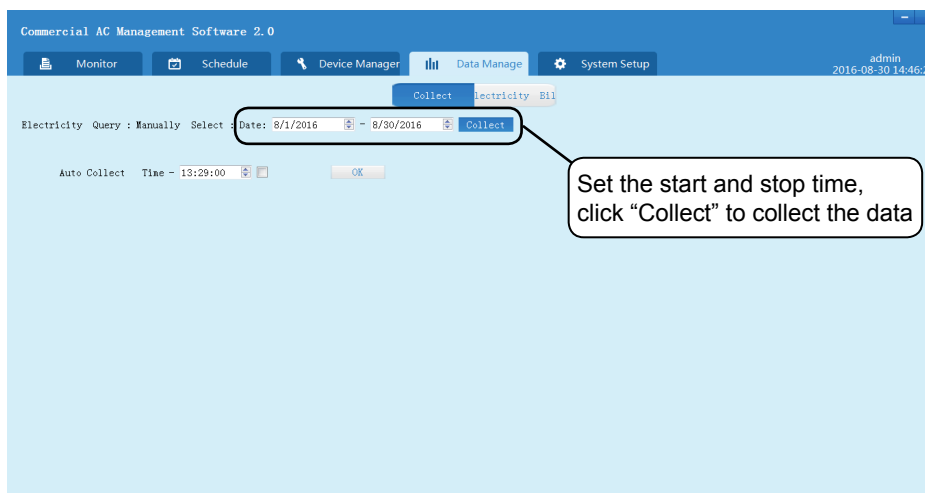
## 8.2 Electricity information setting

Electricity price setting: Each gateway needs set the electricity price. Set the start time, price and price unit for peak, average and valley. Click “Download” to active the setting.

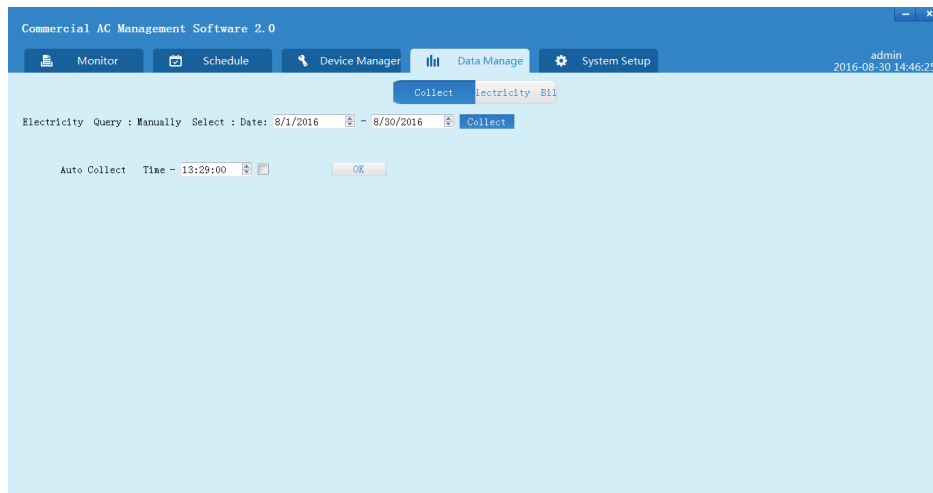
Set the pulse value, primary value, secondary value for each gateway. Click “Download” to active the setting.



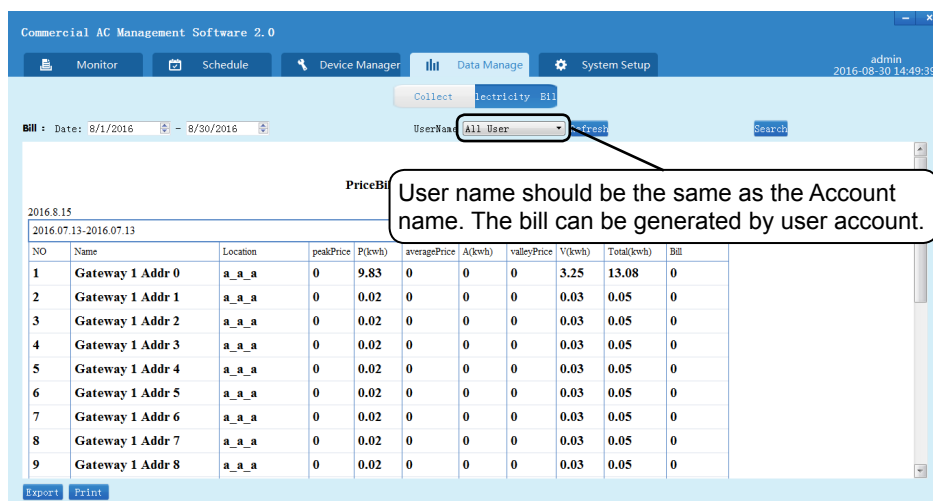
Collect the power consumption data in “Data Manage” interface. Set the time range and then click “Collect”. The process shows on the interface. Click “Stop” to stop the collection.



Auto Collect: set the auto collect time, check the checkbox and then click “OK”. Power consumption data will be automatically collected at the time you set. Uncheck the checkbox to cancel the auto collection. Manual collection has a higher priority and will cover the data auto collected

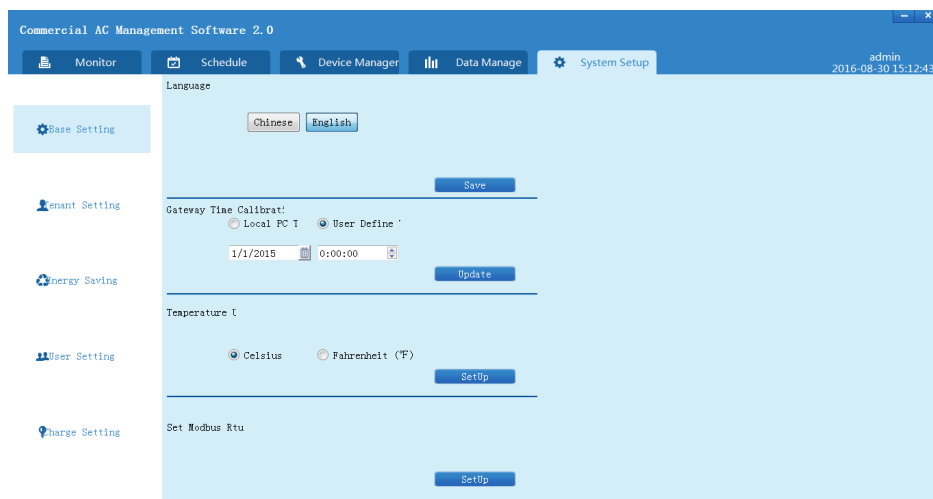


In “Electricity Bill” interface, input the time range and user name and then click “Search”, the bill will be shown on the interface. Click “Export” or “Print” to export or print the bill.



## System running log

### 1. Basic setting



Language: English and Chinese are available

Gateway time proofreading: the gateway IGU02 records electricity consumption. “Local PC time” and “User Time” are selectable.

Temperature units: Temperature units setting for each interface. Celsius and Fahrenheit is optional.

Modbus port Setting: third-party interface is provided through the computer serial port



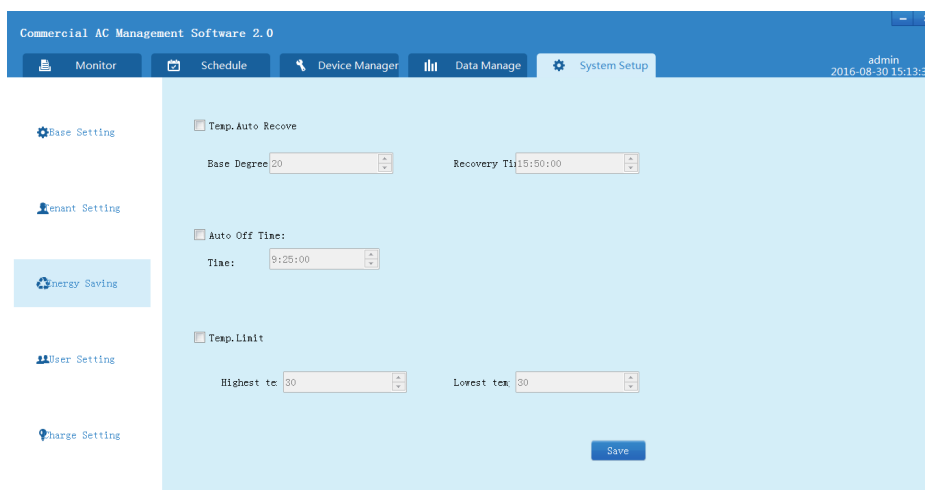
Connect 485 serial port to the computer, select the corresponding port in the port setting interface and then click “Open Com”. The third-party software can query and control the Air-Con indoor units through this port.

## 2. Energy saving Settings

Temperature auto recovery: when reach the recovery time, the set temperature becomes the “Base degree” automatically.

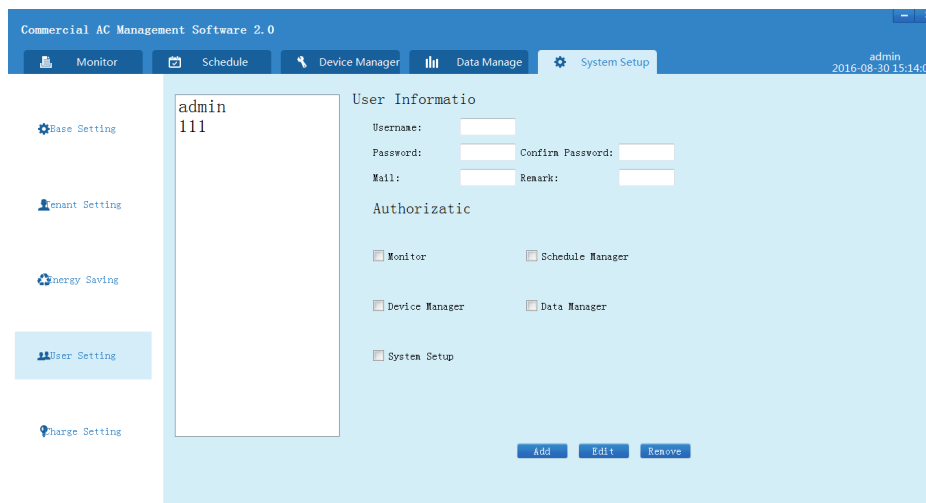
Power off: Power off when reach the set time.

Temperature limit: Set the temperature limitation to save energy. Set temperature should not exceed the highest temperature in heating mode and should not be lower than the lowest temperature in cooling and dry mode.



### 3. User management

Add, edit and delete the user information, including username, password, email, and remark, and set the permissions for users.





### Point table

Port property 9600bps  
 8 data bits  
 1 stop bit  
 no checking

Read--function code 03H

Write--function code 10H

NO.	point description	potocol address	additional address	point type	status
1	reserve	40001			
2	reserve	40002			
3	reserve	40003			
4	reserve	40004			
5	reserve	40005			
6	ON/OFF	40006		AO	1:ON, 0:OFF
7	reserve	40007			
8	reserve	40008			
9	reserve	40009			
10	reserve	40010			
11	01 indoor unit ON/OFF setting	40011	0	DO	1:ON, 0:OFF
12	02 indoor unit ON/OFF setting		1	DO	1:ON, 0:OFF
13	03 indoor unit ON/OFF setting		2	DO	1:ON, 0:OFF
14	04 indoor unit ON/OFF setting		3	DO	1:ON, 0:OFF
15	05 indoor unit ON/OFF setting		4	DO	1:ON, 0:OFF
16	06 indoor unit ON/OFF setting		5	DO	1:ON, 0:OFF
17	07 indoor unit ON/OFF setting		6	DO	1:ON, 0:OFF
18	08 indoor unit ON/OFF setting		7	DO	1:ON, 0:OFF
19	09 indoor unit ON/OFF setting		8	DO	1:ON, 0:OFF
20	10 indoor unit ON/OFF setting		9	DO	1:ON, 0:OFF
21	11 indoor unit ON/OFF setting		10	DO	1:ON, 0:OFF
22	12 indoor unit ON/OFF setting		11	DO	1:ON, 0:OFF
23	13 indoor unit ON/OFF setting		12	DO	1:ON, 0:OFF
24	14 indoor unit ON/OFF setting		13	DO	1:ON, 0:OFF
25	15 indoor unit ON/OFF setting		14	DO	1:ON, 0:OFF
26	16 indoor unit ON/OFF setting		15	DO	1:ON, 0:OFF
27	17 indoor unit ON/OFF setting		40012	0	DO
28	18 indoor unit ON/OFF setting	1		DO	1:ON, 0:OFF
29	19 indoor unit ON/OFF setting	2		DO	1:ON, 0:OFF
30	20 indoor unit ON/OFF setting	3		DO	1:ON, 0:OFF
31	21 indoor unit ON/OFF setting	4		DO	1:ON, 0:OFF
32	22 indoor unit ON/OFF setting	5		DO	1:ON, 0:OFF
33	23 indoor unit ON/OFF setting	6		DO	1:ON, 0:OFF
34	24 indoor unit ON/OFF setting	7		DO	1:ON, 0:OFF
35	25 indoor unit ON/OFF setting	8		DO	1:ON, 0:OFF
36	26 indoor unit ON/OFF setting	9		DO	1:ON, 0:OFF
37	27 indoor unit ON/OFF setting	10		DO	1:ON, 0:OFF
38	28 indoor unit ON/OFF setting	11		DO	1:ON, 0:OFF
39	29 indoor unit ON/OFF setting	12		DO	1:ON, 0:OFF
40	30 indoor unit ON/OFF setting	13		DO	1:ON, 0:OFF
41	31 indoor unit ON/OFF setting	14		DO	1:ON, 0:OFF
42	32 indoor unit ON/OFF setting	15	DO	1:ON, 0:OFF	

NO.	point description	potocol address	additional address	point type	status
43	33 indoor unit ON/OFF setting	40013	0	DO	1:ON, 0:OFF
44	34 indoor unit ON/OFF setting		1	DO	1:ON, 0:OFF
45	35 indoor unit ON/OFF setting		2	DO	1:ON, 0:OFF
46	36 indoor unit ON/OFF setting		3	DO	1:ON, 0:OFF
47	37 indoor unit ON/OFF setting		4	DO	1:ON, 0:OFF
48	38 indoor unit ON/OFF setting		5	DO	1:ON, 0:OFF
49	39 indoor unit ON/OFF setting		6	DO	1:ON, 0:OFF
50	40 indoor unit ON/OFF setting		7	DO	1:ON, 0:OFF
51	NULL		8	DO	1:ON, 0:OFF
52	NULL		9	DO	1:ON, 0:OFF
53	NULL		10	DO	1:ON, 0:OFF
54	NULL		11	DO	1:ON, 0:OFF
55	NULL		12	DO	1:ON, 0:OFF
56	NULL		13	DO	1:ON, 0:OFF
57	NULL		14	DO	1:ON, 0:OFF
58	NULL	15	DO	1:ON, 0:OFF	
75	01 indoor unit ON/OFF status	40015	0	DI	1:ON, 0:OFF
76	02 indoor unit ON/OFF status		1	DI	1:ON, 0:OFF
77	03 indoor unit ON/OFF status		2	DI	1:ON, 0:OFF
78	04 indoor unit ON/OFF status		3	DI	1:ON, 0:OFF
79	05 indoor unit ON/OFF status		4	DI	1:ON, 0:OFF
80	06 indoor unit ON/OFF status		5	DI	1:ON, 0:OFF
81	07 indoor unit ON/OFF status		6	DI	1:ON, 0:OFF
82	08 indoor unit ON/OFF status		7	DI	1:ON, 0:OFF
83	09 indoor unit ON/OFF status		8	DI	1:ON, 0:OFF
84	10 indoor unit ON/OFF status		9	DI	1:ON, 0:OFF
85	11 indoor unit ON/OFF status		10	DI	1:ON, 0:OFF
86	12 indoor unit ON/OFF status		11	DI	1:ON, 0:OFF
87	13 indoor unit ON/OFF status		12	DI	1:ON, 0:OFF
88	14 indoor unit ON/OFF status		13	DI	1:ON, 0:OFF
89	15 indoor unit ON/OFF status		14	DI	1:ON, 0:OFF
90	16 indoor unit ON/OFF status	15	DI	1:ON, 0:OFF	
91	17 indoor unit ON/OFF status	40016	0	DI	1:ON, 0:OFF
92	18 indoor unit ON/OFF status		1	DI	1:ON, 0:OFF
93	19 indoor unit ON/OFF status		2	DI	1:ON, 0:OFF
94	20 indoor unit ON/OFF status		3	DI	1:ON, 0:OFF
95	21 indoor unit ON/OFF status		4	DI	1:ON, 0:OFF
96	22 indoor unit ON/OFF status		5	DI	1:ON, 0:OFF
97	23 indoor unit ON/OFF status		6	DI	1:ON, 0:OFF
98	24 indoor unit ON/OFF status		7	DI	1:ON, 0:OFF
99	25 indoor unit ON/OFF status		8	DI	1:ON, 0:OFF
100	26 indoor unit ON/OFF status		9	DI	1:ON, 0:OFF
101	27 indoor unit ON/OFF status		10	DI	1:ON, 0:OFF
102	28 indoor unit ON/OFF status		11	DI	1:ON, 0:OFF
103	29 indoor unit ON/OFF status		12	DI	1:ON, 0:OFF
104	30 indoor unit ON/OFF status		13	DI	1:ON, 0:OFF
105	31 indoor unit ON/OFF status		14	DI	1:ON, 0:OFF
106	32 indoor unit ON/OFF status	15	DI	1:ON, 0:OFF	

NO.	point description	potocol address	additional address	point type	status
107	33 indoor unit ON/OFF status	40017	0	DI	1:ON, 0:OFF
108	34 indoor unit ON/OFF status		1	DI	1:ON, 0:OFF
109	35 indoor unit ON/OFF status		2	DI	1:ON, 0:OFF
110	36 indoor unit ON/OFF status		3	DI	1:ON, 0:OFF
111	37 indoor unit ON/OFF status		4	DI	1:ON, 0:OFF
112	38 indoor unit ON/OFF status		5	DI	1:ON, 0:OFF
113	39 indoor unit ON/OFF status		6	DI	1:ON, 0:OFF
114	40 indoor unit ON/OFF status		7	DI	1:ON, 0:OFF
115	NULL		8	DI	1:ON, 0:OFF
116	NULL		9	DI	1:ON, 0:OFF
117	NULL		10	DI	1:ON, 0:OFF
118	NULL		11	DI	1:ON, 0:OFF
119	NULL		12	DI	1:ON, 0:OFF
120	NULL		13	DI	1:ON, 0:OFF
121	NULL		14	DI	1:ON, 0:OFF
122	NULL	15	DI	1:ON, 0:OFF	
139	01 indoor error	40019	0	DI	1:error 0:normal
140	02 indoor error		1	DI	1:error 0:normal
141	03 indoor error		2	DI	1:error 0:normal
142	04 indoor error		3	DI	1:error 0:normal
143	05 indoor error		4	DI	1:error 0:normal
144	06 indoor error		5	DI	1:error 0:normal
145	07 indoor error		6	DI	1:error 0:normal
146	08 indoor error		7	DI	1:error 0:normal
147	09 indoor error		8	DI	1:error 0:normal
148	10 indoor error		9	DI	1:error 0:normal
149	11 indoor error		10	DI	1:error 0:normal
150	12 indoor error		11	DI	1:error 0:normal
151	13 indoor error		12	DI	1:error 0:normal
152	14 indoor error		13	DI	1:error 0:normal
153	15 indoor error		14	DI	1:error 0:normal
154	16 indoor error		15	DI	1:error 0:normal
155	17 indoor error	40020	0	DI	1:error 0:normal
156	18 indoor error		1	DI	1:error 0:normal
157	19 indoor error		2	DI	1:error 0:normal
158	20 indoor error		3	DI	1:error 0:normal
159	21 indoor error		4	DI	1:error 0:normal
160	22 indoor error		5	DI	1:error 0:normal
161	23 indoor error		6	DI	1:error 0:normal
162	24 indoor error		7	DI	1:error 0:normal
163	25 indoor error		8	DI	1:error 0:normal
164	26 indoor error		9	DI	1:error 0:normal
165	27 indoor error		10	DI	1:error 0:normal
166	28 indoor error		11	DI	1:error 0:normal
167	29 indoor error		12	DI	1:error 0:normal
168	30 indoor error		13	DI	1:error 0:normal
169	31 indoor error		14	DI	1:error 0:normal
170	32 indoor error	15	DI	1:error 0:normal	

NO.	point description	potocol address	additional address	point type	status
171	33 indoor error	40021	0	DI	1:error 0:normal
172	34 indoor error		1	DI	1:error 0:normal
173	35 indoor error		2	DI	1:error 0:normal
174	36 indoor error		3	DI	1:error 0:normal
175	37 indoor error		4	DI	1:error 0:normal
176	38 indoor error		5	DI	1:error 0:normal
177	39 indoor error		6	DI	1:error 0:normal
178	40 indoor error		7	DI	1:error 0:normal
179			8	DI	1:error 0:normal
180			9	DI	1:error 0:normal
181			10	DI	1:error 0:normal
182			11	DI	1:error 0:normal
183			12	DI	1:error 0:normal
184			13	DI	1:error 0:normal
185			14	DI	1:error 0:normal
186			15	DI	1:error 0:normal
203	reserve	40023			
204	reserve	40024			
205	reserve	40025			
206	reserve	40026			
207	reserve	40027			
208	reserve	40028			
209	reserve	40029			
210	reserve	40030			
211	indoor unit 1 ON/OFF setting	40031		AO(write)	1:ON, 0:OFF
212	indoor unit 1 model setting	40032			0:auto, 1:fan 2:cooling, 3:dry 4:heating
213	indoor unit 1 temp. setting	40033			16~30
214	indoor unit 1 fan speed setting	40034			0:auto, 1:low 2:middle, 3:high
215	indoor unit 1 ON/OFF status	40035		AI(read)	1:ON, 0:OFF
216	indoor unit 1 running mode	40036			0:auto, 1:fan 2:cooling, 3:dry 4:heating
217	indoor unit 1 set temp.	40037			1-16 corresponding 16°C-30°C
218	indoor unit 1 actual fan speed	40038			0:auto, 1:low 2:middle, 3:high
219	indoor unit 1 actual temp.	40039			-20~50
220	indoor unit 1 error code	40040			0~150
221	indoor unit 2 ON/OFF setting	40041		AO(write)	1:ON, 0:OFF
222	indoor unit 2 mode setting	40042			0:auto, 1:fan 2:cooling, 3:dry 4:heating
223	indoor unit 2 temp.setting	40043			16~30
224	indoor unit 2 fan speed setting	40044			0:auto, 1:low 2:middle, 3:high
225	indoor unit 2 ON/OFF status	40045		AI(read)	1:ON, 0:OFF
226	indoor unit 2 running mode	40046			0:auto, 1:fan 2:cooling, 3:dry 4:heating
227	indoor unit 2 set temp.	40047			1-16 corresponding 16°C-30°C
228	indoor unit 2 actual fan speed	40048			0:auto, 1:low 2:middle, 3:high
229	indoor unit 2 actual temp.	40049			-20~50
230	indoor unit 2 error code	40050			0~150

NO.	point description	potocol address	additional address	point type	status
231	indoor unit 3 ON/OFF setting	40051		AO(write)	1:ON, 0:OFF
232	indoor unit 3 mode setting	40052			0:auto, 1:fan 2:cooling, 3:dry, 4:heating
233	indoor unit 3 temp. setting	40053			16~30
234	indoor unit 3 fan speed setting	40054			0:auto, 1:low, 2:middle, 3:high
235	indoor unit 3 ON/OFF status	40055		AI(read)	1:ON, 0:OFF
236	indoor unit 3 running mode	40056			0:auto, 1:fan 2:cooling, 3:dry 4:heating
237	indoor unit 3 set temp.	40057			1-16 corresponding 16°C-30°C
238	indoor unit 3 actual fan speed	40058			0:auto, 1:low 2: middle,3:high
239	indoor unit 3 actual temp.	40059			-20~50
240	indoor unit 3 error code	40060		0~150	
241	indoor unit 4 ON/OFF setting	40061		AO(write)	1:ON, 0:OFF
242	indoor unit 4 mode setting	40062			0:auto, 1:fan 2:cooling, 3:dry 4:heating
243	indoor unit 4 temp. setting	40063			16~30
244	indoor unit 4 fan speed setting	40064			0:auto, 1:low 2:middle, 3:high
245	indoor unit 4 ON/OFF status	40065		AI(read)	1:ON, 0:OFF
246	indoor unit 4 running mode	40066			0:auto, 1:fan 2:cooling, 3:dry 4:heating
247	indoor unit 4 set temp.	40067			1-16 corresponding 16°C-30°C
248	indoor unit 4 actual fan speed	40068			0:auto, 1:low 2:middle, 3:high
249	indoor unit 4 actual temp.	40069			-20~50
250	indoor unit 4 error code	40070		0~150	
251	indoor unit 5 ON/OFF setting	40071		AO(write)	1:ON, 0:OFF
252	indoor unit 5 mode setting	40072			0:auto,1:fan 2:cooling, 3:dry 4:heating
253	indoor unit 5 temp. setting	40073			16~30
254	indoor unit 5 fan speed setting	40074			0:auto, 1:low 2:middle, 3:high
255	indoor unit 5 ON/OFF status	40075		AI(read)	1:ON, 0:OFF
256	indoor unit 5 running mode	40076			0:auto, 1:fan 2:cooling, 3:dry 4:heating
257	indoor unit 5 set temp.	40077			1-16 corresponding 16°C-30°C
258	indoor unit 5 actual fan speed	40078			0:auto, 1:low 2:middle, 3:high
259	indoor unit 5 actual temp.	40079			-20~50
260	indoor unit 5 error code	40080		0~150	
261	indoor unit 6 ON/OFF setting	40081		AO(write)	1:ON, 0:OFF
262	indoor unit 6 mode setting	40082			0:auto, 1:fan 2:cooling, 3:dry 4:heating
263	indoor unit 6 temp. setting	40083			16~30
264	indoor unit 6 fan speed setting	40084			0:auto, 1:low 2:middle, 3:high
265	indoor unit 6 ON/OFF status	40085		AI(read)	1:ON, 0:OFF
266	indoor unit 6 running mode	40086			0:auto, 1:fan 2:cooling, 3:dry 4:heating
267	indoor unit 6 set temp.	40087			1-16 corresponding 16°C-30°C
268	indoor unit 6 actual fan speed	40088			0:auto, 1:low 2:middle, 3:high
269	indoor unit 6 actual temp.	40089			-20~50
270	indoor unit 6 error code	40090		0~150	
271	indoor unit 7 ON/OFF setting	40091		AO(write)	1:ON, 0:OFF
272	indoor unit 7 mode setting	40092			0:auto, 1:fan 2:cooling, 3:dry 4:heating
273	indoor unit 7 temp. setting	40093			16~30
274	indoor unit 7 fan speed setting	40094			0:auto, 1:low 2:middle, 3:high

NO.	point description	potocol address	additional address	point type	status
275	indoor unit 7 ON/OFF status	40095		AI(read)	1:ON, 0:OFF
276	indoor unit 7 running mode	40096			0:auto, 1:fan 2:cooling, 3:dry 4:heating
277	indoor unit 7 set temp.	40097			1-16 corresponding 16°C-30°C
278	indoor unit 7 actual fan speed	40098			0:auto, 1:low 2:middle, 3:high
279	indoor unit 7 actual temp.	40099			-20~50
280	indoor unit 7 error code	40100			0~150
281	indoor unit 8 ON/OFF setting	40101		AO(write)	1:ON, 0:OFF
282	indoor unit 8 mode setting	40102			0:auto, 1:fan 2:cooling, 3:dry 4:heating
283	indoor unit 8 temp. setting	40103			16~30
284	indoor unit 8 fan speed setting	40104			0:auto, 1:low 2:middle, 3:high
285	indoor unit 8 ON/OFF status	40105		AI(read)	1:ON, 0:OFF
286	indoor unit 8 running mode	40106			0:auto, 1:fan 2:cooling, 3:dry 4:heating
287	indoor unit 8 set temp.	40107			1-16 corresponding 16°C-30°C
288	indoor unit 8 actual fan speed	40108			0:auto, 1:low 2:middle, 3:high
289	indoor unit 8 actual temp.	40109			-20~50
290	indoor unit 8 error code	40110			0~150
291	indoor unit 9 ON/OFF setting	40111		AO(write)	1:ON, 0:OFF
292	indoor unit 9 mode setting	40112			0:auto, 1:fan 2:cooling, 3:dry 4:heating
293	indoor unit 9 temp. setting	40113			16~30
294	indoor unit 9 fan speed setting	40114			0:auto, 1:low 2:middle, 3:high
295	indoor unit 9 ON/OFF status	40115		AI(read)	1:ON, 0:OFF
296	indoor unit 9 running mode	40116			0:auto, 1:fan 2:cooling, 3:dry 4:heating
297	indoor unit 9 set temp.	40117			1-16 corresponding 16°C-30°C
298	indoor unit 9 actual fan speed	40118			0:auto, 1:low 2:middle, 3:high
299	indoor unit 9 actual temp.	40119			-20~50
300	indoor unit 9 error code	40120			0~150
301	indoor unit 10 ON/OFF setting	40121		AO(write)	1:ON, 0:OFF
302	indoor unit 10 mode setting	40122			0:auto, 1:fan 2:cooling, 3:dry 4:heating
303	indoor unit 10 temp. setting	40123			16~30
304	indoor unit 10 fan speed setting	40124			0:auto, 1:low 2:middle, 3:high
305	indoor unit 10 ON/OFF status	40125		AI(read)	1:ON, 0:OFF
306	indoor unit 10 running mode	40126			0:auto, 1:fan 2:cooling, 3:dry 4:heating
307	indoor unit 10 set temp.	40127			1-16 corresponding 16°C-30°C
308	indoor unit 10 actual fan speed	40128			0:auto, 1:low 2:middle, 3:high
309	indoor unit 10 actual temp.	40129			-20~50
310	indoor unit 10 error code	40130			0~150
311	indoor unit 11 ON/OFF setting	40131		AO(write)	1:ON, 0:OFF
312	indoor unit 11 mode setting	40132			0:auto, 1:fan 2:cooling, 3:dry 4:heating
313	indoor unit 11 temp. setting	40133			16~30
314	indoor unit 11 fan speed setting	40134			

NO.	point description	potocol address	additional address	point type	status
315	indoor unit 11 ON/OFF status	40135		AI(read)	1:ON, 0:OFF
316	indoor unit 11 running mode	40136			0:auto, 1:fan 2:cooling, 3:dry 4:heating
317	indoor unit 11 set temp.	40137			1-16 corresponding 16°C-30°C
318	indoor unit 11 actual fan speed	40138			0:auto, 1:low 2:middle, 3:high
319	indoor unit 11 actual temp.	40139			-20~50
320	indoor unit 11 error code	40140			0~150
321	indoor unit 12 ON/OFF setting	40141		AO(write)	1:ON, 0:OFF
322	indoor unit 12 mode setting	40142			0:auto, 1:fan 2:cooling, 3:dry 4:heating
323	indoor unit 12 temp. setting	40143			16~30
324	indoor unit 12 fan speed setting	40144			0:auto, 1:low 2:middle, 3:high
325	indoor unit 12 ON/OFF status	40145		AI(read)	1:ON, 0:OFF
326	indoor unit 12 running mode	40146			0:auto, 1:fan 2:cooling, 3:dry 4:heating
327	indoor unit 12 set temp.	40147			1-16 corresponding 16°C-30°C
328	indoor unit 12 actual fan speed	40148			0:auto, 1:low 2:middle, 3:high
329	indoor unit 12 actual temp.	40149			-20~50
330	indoor unit 12 error code	40150			0~150
331	indoor unit 13 ON/OFF setting	40151		AO(write)	1:ON, 0:OFF
332	indoor unit 13 mode setting	40152			0:auto 1:fan 2:cooling, 3:dry 4:heating
333	indoor unit 13 temp. setting	40153			16~30
334	indoor unit 13 fan speed setting	40154			0:auto, 1:low 2:middle, 3:high
335	indoor unit 13 ON/OFF status	40155		AI(read)	1:ON, 0:OFF
336	indoor unit 13 running mode	40156			0:auto, 1:fan 2:cooling, 3:dry 4:heating
337	indoor unit 13 set temp.	40157			1-16 corresponding 16°C-30°C
338	indoor unit 13 actual fan speed	40158			0:auto, 1:low 2:middle, 3:high
339	indoor unit 13 actual temp.	40159			-20~50
340	indoor unit 13 error code	40160			0~150
341	indoor unit 14 ON/OFF setting	40161		AO(write)	1:ON, 0:OFF
342	indoor unit 14 mode setting	40162			0:auto, 1:fan 2:cooling, 3:dry 4:heating
343	indoor unit 14 temp. setting	40163			16~30
344	indoor unit 14 fan speed setting	40164			0:auto, 1:low 2:middle, 3:high
345	indoor unit 14 ON/OFF status	40165		AI(read)	1:ON, 0:OFF
346	indoor unit 14 running mode	40166			0:auto, 1:fan 2:cooling, 3:dry 4:heating
347	indoor unit 14 set temp.	40167			1-16 corresponding 16°C-30°C
348	indoor unit 14 actual fan speed	40168			0:auto, 1:low 2:middle, 3:high
349	indoor unit 14 actual temp.	40169			-20~50
350	indoor unit 14 error code	40170			0~150
351	indoor unit 15 ON/OFF setting	40171		AO(write)	1:ON, 0:OFF
352	indoor unit 15 mode setting	40172			0:auto, 1:fan 2:cooling, 3:dry 4:heating
353	indoor unit 15 temp. setting	40173			16~30
354	indoor unit 15 fan speed setting	40174			0:auto, 1:low 2:middle, 3:high



NO.	point description	potocol address	additional address	point type	status
355	indoor unit 15 ON/OFF status	40175		AI(read)	1:ON, 0:OFF
356	indoor unit 15 running mode	40176			0:auto, 1:fan 2:cooling, 3:dry 4:heating
357	indoor unit 15 set temp.	40177			1-16 corresponding 16°C-30°C
358	indoor unit 15 actual fan speed	40178			0:auto, 1:low 2:middle, 3:high
359	indoor unit 15 actual temp.	40179			-20~50
360	indoor unit 15 error code	40180			0~150
361	indoor unit 16 ON/OFF setting	40181		AO(write)	1:ON, 0:OFF
362	indoor unit 16 mode setting	40182			0:auto, 1:fan 2:cooling, 3:dry 4:heating
363	indoor unit 16 temp. setting	40183			16~30
364	indoor unit 16 fan speed setting	40184			0:auto, 1:low 2:middle, 3:high
365	indoor unit 16 ON/OFF status	40185		AI(read)	1:ON, 0:OFF
366	indoor unit 16 running mode	40186			0:auto, 1:fan 2:cooling, 3:dry 4:heating
367	indoor unit 16 set temp.	40187			1-16 corresponding 16°C-30°C
368	indoor unit 16 actual fan speed	40188			0:auto, 1:low 2:middle, 3:high
369	indoor unit 16 actual temp.	40189			-20~50
370	indoor unit 16 error code	40190			0~150
371	indoor unit 17 ON/OFF setting	40191		AO(write)	1:ON, 0:OFF
372	indoor unit 17 mode setting	40192			0:auto, 1:fan 2:cooling, 3:dry 4:heating
373	indoor unit 17 temp. setting	40193			16~30
374	indoor unit 17 fan speed setting	40194			0:auto, 1:low 2:middle, 3:high
375	indoor unit 17 ON/OFF status	40195		AI(read)	1:ON, 0:OFF
376	indoor unit 17 running mode	40196			0:auto, 1:fan 2:cooling, 3:dry 4:heating
377	indoor unit 17 set temp.	40197			1-16 corresponding 16°C-30°C
378	indoor unit 17 actual fan speed	40198			0:auto, 1:low 2:middle, 3:high
379	indoor unit 17 actual temp.	40199			-20~50
380	indoor unit 17 error code	40200			0~150
381	indoor unit 18 ON/OFF setting	40201		AO(write)	1:ON, 0:OFF
382	indoor unit 18 mode setting	40202			0:auto, 1:fan 2:cooling, 3:dry 4:heating
383	indoor unit 18 temp. setting	40203			16~30
384	indoor unit 18 fan speed setting	40204			0:auto, 1:low 2:middle, 3:high
385	indoor unit 18 ON/OFF status	40205		AI(read)	1:ON, 0:OFF
386	indoor unit 18 running mode	40206			0:auto, 1:fan 2:cooling, 3:dry 4:heating
387	indoor unit 18 set temp.	40207			1-16 corresponding 16°C-30°C
388	indoor unit 18 actual fan speed	40208			0:auto, 1:low 2:middle, 3:high
389	indoor unit 18 actual temp.	40209			-20~50
390	indoor unit 18 error code	40210			0~150
391	indoor unit 19 ON/OFF setting	40211		AO(write)	1:ON, 0:OFF
392	indoor unit 19 mode setting	40212			0:auto, 1:fan 2:cooling, 3:dry 4:heating
393	indoor unit 19 temp. setting	40213			16~30
394	indoor unit 19 fan speed setting	40214			0:auto, 1:low 2:middle, 3:high



NO.	point description	potocol address	additional address	point type	status
395	indoor unit 19 ON/OFF status	40215		AI(read)	1:ON, 0:OFF
396	indoor unit 19 running mode	40216			0:auto, 1:fan 2:cooling, 3:dry 4:heating
397	indoor unit 19 set temp.	40217			1-16 corresponding 16°C-30°C
398	indoor unit 19 actual fan speed	40218			0:auto, 1:low 2:middle, 3:high
399	indoor unit 19 actual temp.	40219			-20~50
400	indoor unit 19 error code	40220			0~150
401	indoor unit 20 ON/OFF setting	40221		AO(write)	1:ON, 0:OFF
402	indoor unit 20 mode setting	40222			0:auto, 1:fan 2:cooling, 3:dry 4:heating
403	indoor unit 20 temp. setting	40223			16~30
404	indoor unit 20 fan speed setting	40224			0:auto, 1:low 2:middle, 3:high
405	indoor unit 20 ON/OFF status	40225		AI(read)	1:ON, 0:OFF
406	indoor unit 20 running mode	40226			0:auto, 1:fan 2:cooling, 3:dry 4:heating
407	indoor unit 20 set temp.	40227			1-16 corresponding 16°C-30°C
408	indoor unit 20 actual fan speed	40228			0:auto, 1:low 2:middle, 3:high
409	indoor unit 20 actual temp.	40229			-20~50
410	indoor unit 20 error code	40230			0~150
411	indoor unit 21 ON/OFF setting	40231		AO(write)	1:ON, 0:OFF
412	indoor unit 21 mode setting	40232			0:auto, 1:fan 2:cooling, 3:dry 4:heating
413	indoor unit 21 temp. setting	40233			16~30
414	indoor unit 21 fan speed setting	40234			0:auto, 1:low 2:middle, 3:high
415	indoor unit 21 ON/OFF status	40235		AI(read)	1:ON, 0:OFF
416	indoor unit 21 running mode	40236			0:auto, 1:fan 2:cooling, 3:dry 4:heating
417	indoor unit 21 set temp.	40237			1-16 corresponding 16°C-30°C
418	indoor unit 21 actual fan speed	40238			0:auto, 1:low 2:middle, 3:high
419	indoor unit 21 actual temp.	40239			-20~50
420	indoor unit 21 error code	40240			0~150
421	indoor unit 22 ON/OFF setting	40241		AO(write)	1:ON, 0:OFF
422	indoor unit 22 mode setting	40242			0:auto, 1:fan 2:cooling, 3:dry 4:heating
423	indoor unit 22 temp. setting	40243			16~30
424	indoor unit 22 fan speed setting	40244			0:auto, 1:low 2:middle, 3:high
425	indoor unit 22 ON/OFF status	40245		AI(read)	1:ON, 0:OFF
426	indoor unit 22 running mode	40246			0:auto, 1:fan 2:cooling, 3:dry 4:heating
427	indoor unit 22 set temp.	40247			1-16 corresponding 16°C-30°C
428	indoor unit 22 actual fan speed	40248			0:auto, 1:low 2:middle, 3:high
429	indoor unit 22 actual temp.	40249			-20~50
430	indoor unit 22 error code	40250			0~150
431	indoor unit 23 ON/OFF setting	40251		AO(write)	1:ON, 0:OFF
432	indoor unit 23 mode setting	40252			0:auto, 1:fan 2:cooling, 3:dry 4:heating
433	indoor unit 23 temp. setting	40253			16~30
434	indoor unit 23 fan speed setting	40254			0:auto, 1:low 2:middle, 3:high

NO.	point description	potocol address	additional address	point type	status
435	indoor unit 23 ON/OFF status	40255		AI(read)	1:ON, 0:OFF
436	indoor unit 23 running mode	40256			0:auto, 1:fan 2:cooling, 3:dry 4:heating
437	indoor unit 23 set temp.	40257			1-16 corresponding 16°C-30°C
438	indoor unit 23 actual fan speed	40258			0:auto, 1:low 2:middle, 3:high
439	indoor unit 23 actual temp.	40259			-20~50
440	indoor unit 23 error code	40260			0~150
441	indoor unit 24 ON/OFF setting	40261		AO(write)	1:ON, 0:OFF
442	indoor unit 24 mode setting	40262			0:auto, 1:fan 2:cooling, 3:dry 4:heating
443	indoor unit 24 temp. setting	40263			16~30
444	indoor unit 24 fan speed setting	40264			0:auto, 1:low 2:middle, 3:high
445	indoor unit 24 ON/OFF status	40265		AI(read)	1:ON, 0:OFF
446	indoor unit 24 running mode	40266			0:auto, 1:fan 2:cooling, 3:dry 4:heating
447	indoor unit 24 set temp.	40267			1-16 corresponding 16°C-30°C
448	indoor unit 24 actual fan speed	40268			0:auto, 1:low 2:middle, 3:high
449	indoor unit 24 actual temp.	40269			-20~50
450	indoor unit 24 error code	40270			0~150
451	indoor unit 25 ON/OFF setting	40271		AO(write)	1:ON, 0:OFF
452	indoor unit 25 mode setting	40272			0:auto, 1:fan 2:cooling, 3:dry 4:heating
453	indoor unit 25 temp. setting	40273			16~30
454	indoor unit 25 fan speed setting	40274			0:auto, 1:low 2:middle, 3:high
455	indoor unit 25 ON/OFF status	40275		AI(read)	1:ON, 0:OFF
456	indoor unit 25 running mode	40276			0:auto, 1:fan 2:cooling, 3:dry 4:heating
457	indoor unit 25 set temp.	40277			1-16 corresponding 16°C-30°C
458	indoor unit 25 actual fan speed	40278			0:auto, 1:low 2:middle, 3:high
459	indoor unit 25 actual temp.	40279			-20~50
460	indoor unit 25 error code	40280			0~150
461	indoor unit 26 ON/OFF setting	40281		AO(write)	1:ON, 0:OFF
462	indoor unit 26 mode setting	40282			0:auto, 1:fan 2:cooling, 3:dry 4:heating
463	indoor unit 26 temp. setting	40283			16~30
464	indoor unit 26 fan speed setting	40284			0:auto, 1:low 2:middle, 3:high
465	indoor unit 26 ON/OFF status	40285		AI(read)	1:ON, 0:OFF
466	indoor unit 26 running mode	40286			0:auto, 1:fan 2:cooling, 3:dry 4:heating
467	indoor unit 26 set temp.	40287			1-16 corresponding 16°C-30°C
468	indoor unit 26 actual fan speed	40288			0:auto, 1:low 2:middle, 3:high
469	indoor unit 26 actual temp.	40289			-20~50
470	indoor unit 26 error code	40290			0~150
471	indoor unit 27 ON/OFF setting	40291		AO(write)	1:ON, 0:OFF
472	indoor unit 27 mode setting	40292			0:auto, 1:fan 2:cooling ,3:dry 4:heating
473	indoor unit 27 temp. setting	40293			16~30
474	indoor unit 27 fan speed setting	40294			0:auto, 1:low 2:middle, 3:high

NO.	point description	potocol address	additional address	point type	status
475	indoor unit 27 ON/OFF status	40295		AI(read)	1:ON, 0:OFF
476	indoor unit 27 running mode	40296			0:auto, 1:fan 2:cooling, 3:dry 4:heating
477	indoor unit 27 set temp.	40297			1-16 corresponding 16°C-30°C
478	indoor unit 27 actual fan speed	40298			0:auto, 1:low 2:middle, 3:high
479	indoor unit 27 actual temp.	40299			-20~50
480	indoor unit 27 error code	40300			0~150
481	indoor unit 28 ON/OFF setting	40301		AO(write)	1:ON, 0:OFF
482	indoor unit 28 mode setting	40302			0:auto, 1:fan 2:cooling, 3:dry 4:heating
483	indoor unit 28 temp. setting	40303			16~30
484	indoor unit 28 fan speed setting	40304			0:auto, 1:low 2:middle, 3:high
485	indoor unit 28 ON/OFF status	40305		AI(read)	1:ON, 0:OFF
486	indoor unit 28 running mode	40306			0:auto, 1:fan 2:cooling, 3:dry 4:heating
487	indoor unit 28 set temp.	40307			1-16 corresponding 16°C-30°C
488	indoor unit 28 actual fan speed	40308			0:auto, 1:low 2:middle, 3:high
489	indoor unit 28 actual temp.	40309			-20~50
490	indoor unit 28 error code	40310			0~150
491	indoor unit 29 ON/OFF setting	40311		AO(write)	1:ON, 0:OFF
492	indoor unit 29 mode setting	40312			0:auto, 1:fan 2:cooling, 3:dry 4:heating
493	indoor unit 29 temp. setting	40313			16~30
494	indoor unit 29 fan speed setting	40314			0:auto, 1:low 2:middle, 3:high
495	indoor unit 29 ON/OFF status	40315		AI(read)	1:ON, 0:OFF
496	indoor unit 29 running mode	40316			0:auto, 1:fan 2:cooling, 3:dry 4:heating
497	indoor unit 29 set temp.	40317			1-16 corresponding 16°C-30°C
498	indoor unit 29 actual fan speed	40318			0:auto, 1:low 2:middle, 3:high
499	indoor unit 29 actual temp.	40319			-20~50
500	indoor unit 29 error code	40320			0~150
501	indoor unit 30 ON/OFF setting	40321		AO(write)	1:ON, 0:OFF
502	indoor unit 30 mode setting	40322			0:auto, 1:fan 2:cooling, 3:dry 4:heating
503	indoor unit 30 temp. setting	40323			16~30
504	indoor unit 30 fan speed setting	40324			0:auto, 1:low 2:middle, 3:high
505	indoor unit 30 ON/OFF status	40325		AI(read)	1:ON, 0:OFF
506	indoor unit 30 running mode	40326			0:auto, 1:fan 2:cooling, 3:dry 4:heating
507	indoor unit 30 set temp.	40327			1-16 corresponding 16°C-30°C
508	indoor unit 30 actual fan speed	40328			0:auto, 1:low 2:middle, 3:high
509	indoor unit 30 actual temp.	40329			-20~50
510	indoor unit 30 error code	40330			0~150
511	indoor unit 31 ON/OFF setting	40331		AO(write)	1:ON, 0:OFF
512	indoor unit 31 mode setting	40332			0:auto, 1:fan 2:cooling, 3:dry 4:heating
513	indoor unit 31 temp. setting	40333			16~30
514	indoor unit 31 fan speed setting	40334			0:auto, 1:low 2:middle, 3:high

NO.	point description	potocol address	additional address	point type	status
515	indoor unit 31 ON/OFF status	40335		AI(read)	1:ON, 0:OFF
516	indoor unit 31 running mode	40336			0:auto, 1:fan 2:cooling, 3:dry 4:heating
517	indoor unit 31 set temp.	40337			1-16 corresponding 16°C-30°C
518	indoor unit 31 actual fan speed	40338			0:auto, 1:low 2:middle, 3:high
519	indoor unit 31 actual temp.	40339			-20~50
520	indoor unit 31 error code	40340			0~150
521	indoor unit 32 ON/OFF setting	40341		AO(write)	1:ON, 0:OFF
522	indoor unit 32 mode setting	40342			0:auto, 1:fan 2:cooling, 3:dry 4:heating
523	indoor unit 32 temp. setting	40343			16~30
524	indoor unit 32 fan speed setting	40344			0:auto, 1:low 2:middle, 3:high
525	indoor unit 32 ON/OFF status	40345		AI(read)	1:ON, 0:OFF
526	indoor unit 32 running mode	40346			0:auto, 1:fan 2:cooling, 3:dry 4:heating
527	indoor unit 32 set temp.	40347			1-16 corresponding 16°C-30°C
528	indoor unit 32 actual fan speed	40348			0:auto, 1:low 2:middle, 3:high
529	indoor unit 32 actual temp.	40349			-20~50
530	indoor unit 32 error code	40350			0~150
531	indoor unit 33 ON/OFF setting	40351		AO(write)	1:ON, 0:OFF
532	indoor unit 33 mode setting	40352			0:auto, 1:fan 2:cooling, 3:dry 4:heating
533	indoor unit 33 temp. setting	40353			16~30
534	indoor unit 33 fan speed setting	40354			0:auto, 1:low 2:middle, 3:high
535	indoor unit 33 ON/OFF status	40355		AI(read)	1:ON, 0:OFF
536	indoor unit 33 running mode	40356			0:auto, 1:fan 2:cooling, 3:dry 4:heating
537	indoor unit 33 set temp.	40357			1-16 corresponding 16°C-30°C
538	indoor unit 33 actual fan speed	40358			0:auto, 1:low 2:middle, 3:high
539	indoor unit 33 actual temp.	40359			-20~50
540	indoor unit 33 error code	40360			0~150
541	indoor unit 34 ON/OFF setting	40361		AO(write)	1:ON, 0:OFF
542	indoor unit 34 mode setting	40362			0:auto, 1:fan 2:cooling, 3:dry 4:heating
543	indoor unit 34 temp. setting	40363			16~30
544	indoor unit 34 fan speed setting	40364			0:auto, 1:low 2:middle, 3:high
545	indoor unit 34 ON/OFF status	40365		AI(read)	1:ON, 0:OFF
546	indoor unit 34 running mode	40366			0:auto, 1:fan 2:cooling, 3:dry 4:heating
547	indoor unit 34 set temp.	40367			1-16 corresponding 16°C-30°C
548	indoor unit 34 actual fan speed	40368			0:auto, 1:low 2:middle, 3:high
549	indoor unit 34 actual temp.	40369			-20~50
550	indoor unit 34 error code	40370			0~150
551	indoor unit 35 ON/OFF setting	40371		AO(write)	1:ON, 0:OFF
552	indoor unit 35 mode setting	40372			0:auto, 1:fan 2:cooling, 3:dry 4:heating
553	indoor unit 35 temp. setting	40373			16~30
554	indoor unit 35 fan speed setting	40374			0:auto, 1:low 2:middle, 3:high

NO.	point description	potocol address	additional address	point type	status
555	indoor unit 35 ON/OFF status	40375		AI(read)	1:ON, 0:OFF
556	indoor unit 35 running mode	40376			0:auto, 1:fan 2:cooling, 3:dry 4:heating
557	indoor unit 35 set temp.	40377			1-16 corresponding 16°C-30°C
558	indoor unit 35 actual fan speed	40378			0:auto, 1:low 2:middle, 3:high
559	indoor unit 35 actual temp.	40379			-20~50
560	indoor unit 35 error code	40380			0~150
561	indoor unit 36 ON/OFF setting	40381		AO(write)	1:ON, 0:OFF
562	indoor unit 36 mode setting	40382			0:auto, 1:fan 2:cooling, 3:dry 4:heating
563	indoor unit 36 temp. setting	40383			16~30
564	indoor unit 36 fan speed setting	40384			0:auto, 1:low 2:middle, 3:high
565	indoor unit 36 ON/OFF status	40385		AI(read)	1:ON, 0:OFF
566	indoor unit 36 running mode	40386			0:auto, 1:fan 2:cooling, 3:dry 4:heating
567	indoor unit 36 set temp.	40387			1-16 corresponding 16°C-30°C
568	indoor unit 36 actual fan speed	40388			0:auto, 1:low 2:middle, 3:high
569	indoor unit 36 actual temp.	40389			-20~50
570	indoor unit 36 error code	40390			0~150
571	indoor unit 37 ON/OFF setting	40391		AO(write)	1:ON, 0:OFF
572	indoor unit 37 mode setting	40392			0:auto, 1:fan 2:cooling, 3:dry 4:heating
573	indoor unit 37 temp. setting	40393			16~30
574	indoor unit 37 fan speed setting	40394			0:auto, 1:low 2:middle, 3:high
575	indoor unit 37 ON/OFF status	40395		AI(read)	1:ON, 0:OFF
576	indoor unit 37 running mode	40396			0:auto, 1:fan 2:cooling, 3:dry 4:heating
577	indoor unit 37 set temp.	40397			1-16 corresponding 16°C-30°C
578	indoor unit 37 actual fan speed	40398			0:auto, 1:low 2:middle, 3:high
579	indoor unit 37 actual temp.	40399			-20~50
580	indoor unit 37 error code	40400			0~150
581	indoor unit 38 ON/OFF setting	40401		AO(write)	1:ON, 0:OFF
582	indoor unit 38 mode setting	40402			0:auto, 1:fan 2:cooling, 3:dry 4:heating
583	indoor unit 38 temp. setting	40403			16~30
584	indoor unit 38 fan speed setting	40404			0:auto, 1:low 2:middle, 3:high
585	indoor unit 38 ON/OFF status	40405		AI(read)	1:ON, 0:OFF
586	indoor unit 38 running mode	40406			0:auto, 1:fan 2:cooling, 3:dry 4:heating
587	indoor unit 38 set temp.	40407			1-16 corresponding 16°C-30°C
588	indoor unit 38 actual fan speed	40408			0:auto, 1:low 2:middle, 3:high
589	indoor unit 38 actual temp.	40409			-20~50
590	indoor unit 38 error code	40410			0~150
591	indoor unit 39 ON/OFF setting	40411		AO(write)	1:ON, 0:OFF
592	indoor unit 39 mode setting	40412			0:auto, 1:fan 2:cooling, 3:dry 4:heating
593	indoor unit 39 temp. setting	40413			16~30
594	indoor unit 39 fan speed setting	40414			0:auto, 1:low 2:middle, 3:high

NO.	point description	potocol address	additional address	point type	status
595	indoor unit 39 ON/OFF status	40415		AI(read)	1:ON, 0:OFF
596	indoor unit 39 running mode	40416			0:auto, 1:fan 2:cooling, 3:dry 4:heating
597	indoor unit 39 set temp.	40417			1-16 corresponding 16°C-30°C
598	indoor unit 39 actual fan speed	40418			0:auto, 1:low 2:middle, 3:high
599	indoor unit 39 actual temp.	40419			-20~50
600	indoor unit 39 error code	40420			0~150
601	indoor unit 40 ON/OFF setting	40421		AO(write)	1:ON, 0:OFF
602	indoor unit 40 mode setting	40422			0:auto, 1:fan 2:cooling, 3:dry 4:heating
603	indoor unit 40 temp. setting	40423			16~30
604	indoor unit 40 fan speed setting	40424			0:auto, 1:low 2:middle, 3:high
605	indoor unit 40 ON/OFF status	40425		AI(read)	1:ON, 0:OFF
606	indoor unit 40 running mode	40426			0:auto, 1:fan 2:cooling, 3:dry 4:heating
607	indoor unit 40 set temp.	40427			1-16 corresponding 16°C-30°C
608	indoor unit 40 actual fan speed	40428			0:auto, 1:low 2:middle, 3:high
609	indoor unit 40 actual temp.	40429			-20~50
610	indoor unit 40 error code	40430			0~150



## 5.2 HCM-03



MRV	LCAC			
	Smart Power	Super Match	R410A ON/OFF	R22 ON/OFF
√	√	√		

- Remote monitoring version; Third party interface: BACnet ip/ Modbus ip/ Modbus rtu
- Max. 1500 indoor units can be controlled
- Max. 4 groups. Each group can connect 20 systems. Each system requires one HA-M\*1
- Operation status setting & monitoring.
- Schedule setting
- Multi user management with different authorized levels
- Operation and Error history log
- Max. 4 groups for each HCM-03
- Max. 20 HA-M\*1 for each group
- Max. 40 indoor units for each HA-M\*1
- Max.1500 indoor units can be controlled by one HCM-03

## • Brief Introduction

With the MRV air conditioner Energy consumption management system HCM-03, which use a protocol converter to transfer all parameter values of the air conditioner system to a computer, the user can monitor the operating state and electric energy consumption status of outdoor and indoor units of the air conditioner system on the monitoring computer, conduct various settings including parameter setting in time, realize individual control, group control, and schedule control of indoor units, receive the alarm information from the air conditioner system in a real time and take corresponding countermeasures, and create various energy consumption report forms according to the corresponding processing data.

## **This control system is used for the following air conditioner**

All models: MRV series.

## **Device required for this control system**

1. Protocol converter IGU02: It is responsible for converting the protocol of the air conditioner system into RS485 protocol for output, receiving the ammeter pulse signals, calculating and storing the Energy consumption for the connected air conditioner system, and transferring the Energy consumption to the computer.
2. Protocol converter HA-MB164AD, HA-MA164AD: It is responsible for converting the protocol of the air conditioner system into 485 protocols for output.
3. HCM-03: It includes hardware and software, The hardware is a small MAC minicomputer and serial to Ethernet converter; the software which is a man-machine interface used for display and control of air conditioner parameters; it can collate and store Energy consumption and output Energy consumption report forms, and can realize remote monitoring, etc. though a LAN and the internet.

## **Control range**

1. For installation of air conditioner sets requiring an air conditioner management system, the number of indoor units of each air conditioner system shall not be more than 40; Otherwise, the protocol converter will not be able to operate normally.
2. One PC have 4 RS485 ports, each of which can be connected with at most 20 converters, so one control system can control at most 80 converters.
3. The maximum number of indoor units controlled by one control system is  $4 \times 20 \times 40 = 3200$ . It is recommendable to make the number of indoor units less than 1500.

## **Requirements for applicable regions and relevant certifications**

1. Requirements for applicable regions:  
Storage temperature range: -40-47 Celsius degree  
Operating temperature range: 10-35 Celsius degree  
Storage humidity range: 5-95%RH  
Elevation: 0-3000m  
Voltage: 100-240Vac  
Frequency: 50Hz/60Hz
2. Safety certification requirements: none
3. Environment certification requirements: compliant with ROHS certification requirements
4. Other special requirements: none

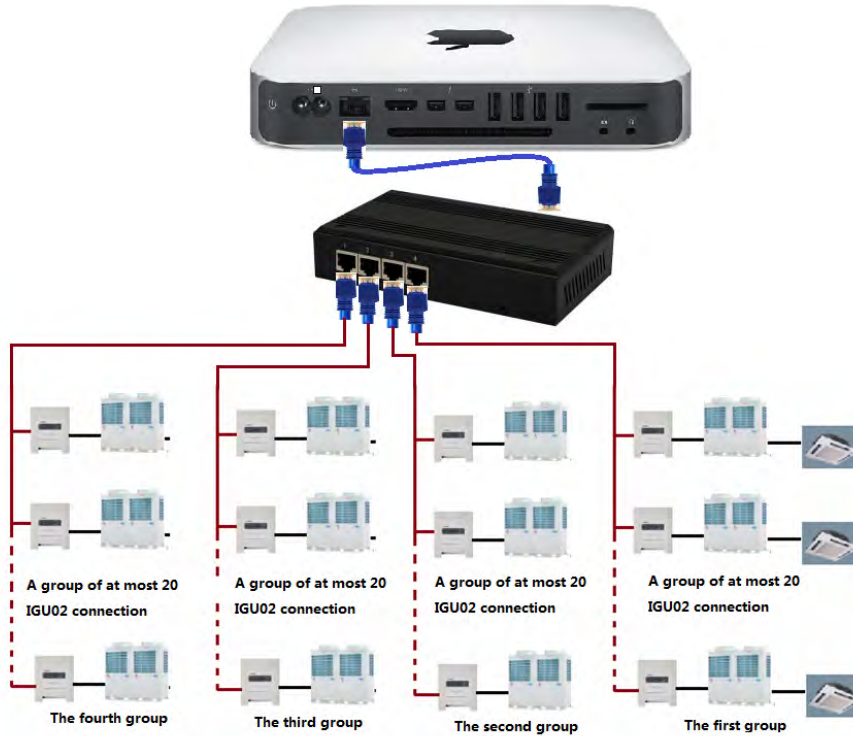
## **Requirements for reliability**

1. Conforming to the standards of national and Haier enterprises: GB4706.1-92, GB4706.12-95, QB1238-91
2. Special requirements: none



- System structure

### System structure diagram



### HCM-03 hardware port

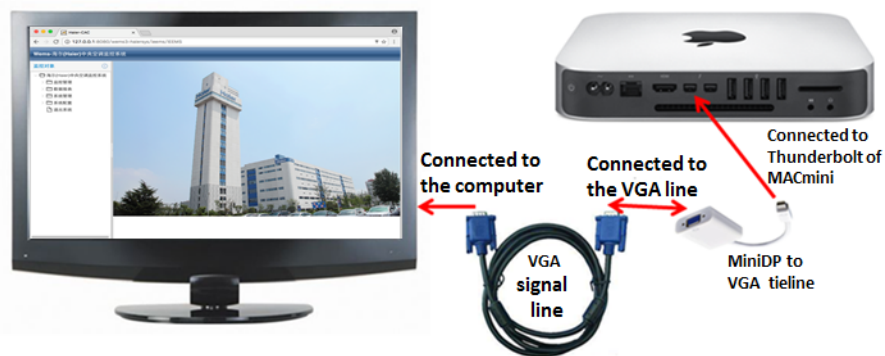
#### 1. MAC mini Device port

1) Ethernet port: Connect serial- Ethernet converter or switchboard, send and receive data and also can used for the third party port.

Note: connection must be using a network cable and cannot open the WiFi function of the MAC mini.

2) Two Thunderbolt ports: Connect external display. Connect the external display with MiniDP to VGA cable (standard) and VGA video signal line to display.

3) Four USB ports: Connect external devices.

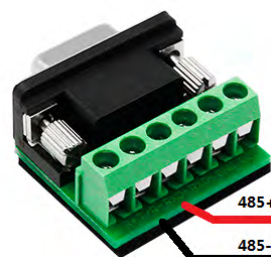
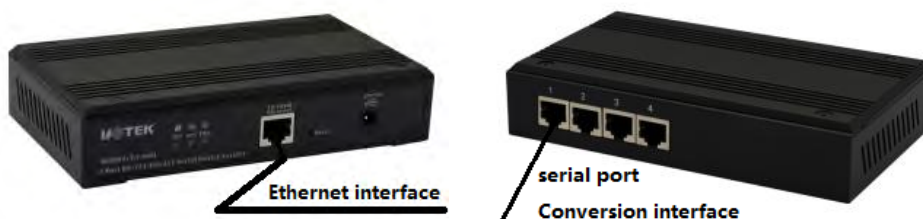


The MAC mini and display connection diagram



## 2. The device port for the serial- Ethernet converter

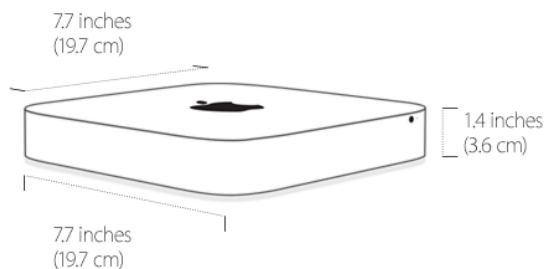
- 1) Ethernet interface: Connect to MAC mini or switchboard
- 2) Four serial ports: Connect external gateway devices.



Connect the protocol gateway and series-Ethernet converter by this cable, RXD+ on this cable connected to RS485+ of protocol converter: T/R- on this cable connected to RS485- of protocol converter.

And then connect the cable Ethernet port to the serial-Ethernet converter.

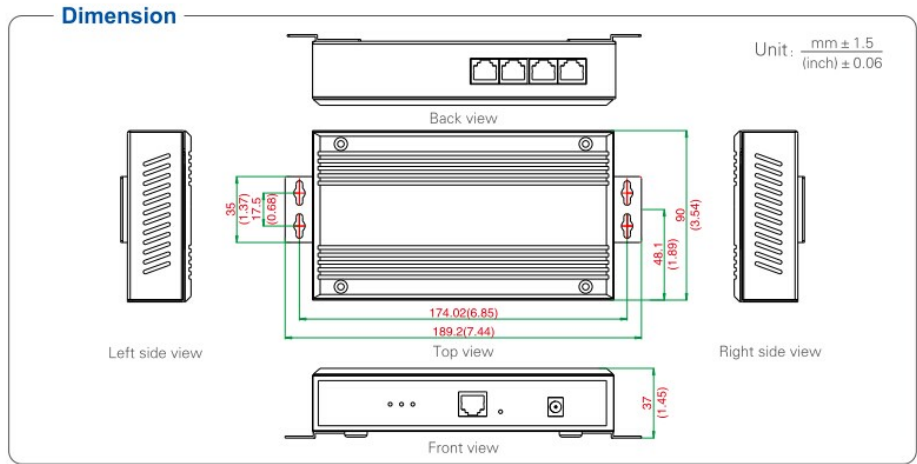
## 3. Dimension of HCM-03



Height: 1.4 inches (3.6 cm)

Width: 7.7 inches (19.7 cm)

Depth: 7.7 inches (19.7 cm)

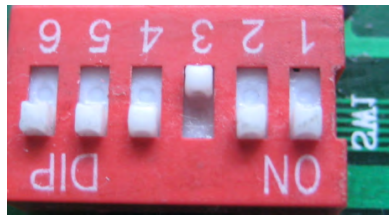


**4. Protocol converter power and wiring requirement**

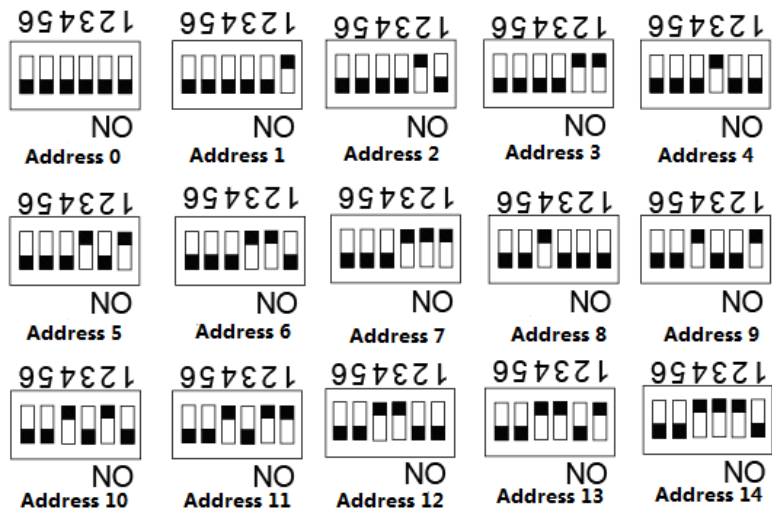
- 1) Protocol converter IGU02 and HA-MA164AD (converter include the transformer, through transformer change the voltage to DC12V) need to supply 220V50/60Hz; HA-MB164AD directly takes DC12V power supply from the outdoor unit PCB
- 2) For any project using an air conditioner management system, iron pipe are required for the communication cables between indoor and outdoor units and for the RS485 bus between converters.
- 3) The central address of indoor units and the address of indoor and outdoor units shall be set by dip switch; for the same indoor unit, the central address shall be set similarly with the addresses of indoor and outdoor units.
- 4) For any project using the air conditioner management system, it is not recommended to have group control
- 5) The communication cables between indoor and outdoor units, the communication cables between converter and converter and ammeter pulse line must have at least 20cm distance to the power cable.

**5. Dial code setting for protocol translator**

- 1) Dial code setting for IGU02  
ON indicates 0; OFF indicates 1

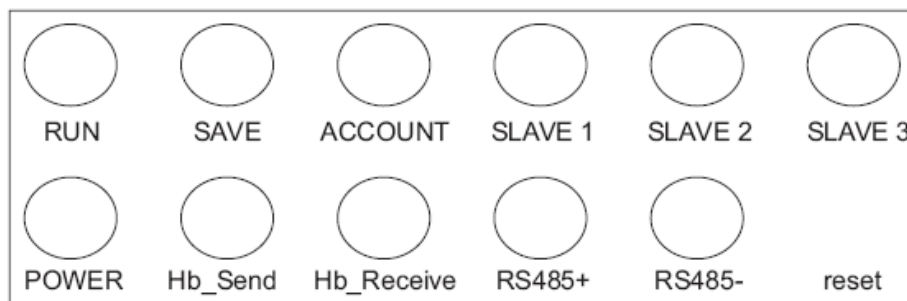


Indicates the address of IGU02, the range is 0-31. The address shown in the above figure is No.4



## 2) Converter lamps definition and wire diagram

Definition of IGU02 lamps:



RUN: It will flash at a fixed frequency in normal operation state.

SAVE: It lights up once when data are saved.

ACCOUNT: Pulse receiving lamp; it lights up when receiving a pulse and goes out when receiving next pulse.

SLAVE1: /

SLAVE2: /

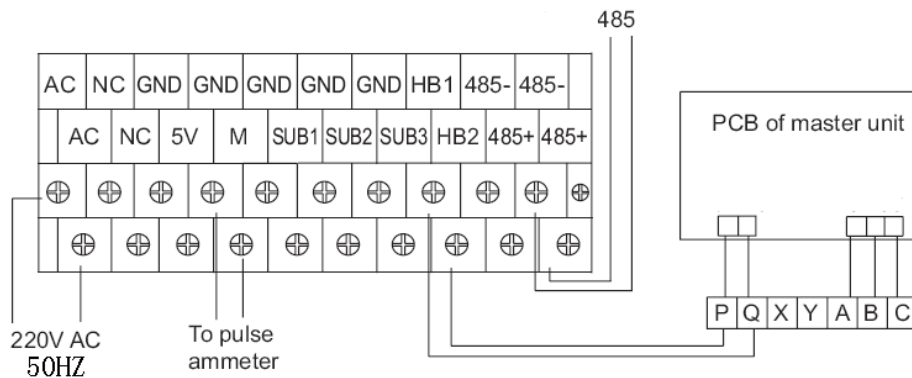
SLAVE3: /

POWER: Power lamp; it lights up constantly when power on.

Hb\_Send, Hb\_Receive: Lamps for communication with air conditioner; these two lamps flash alternately in normal communication state.

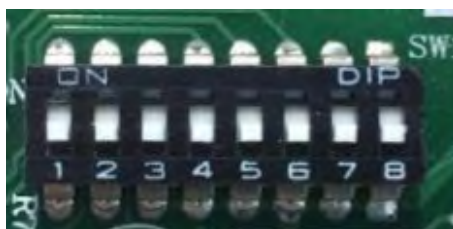
RS485+, RS485-: Lamps for communication with computer; they flash at a high speed frequency

Wiring diagram of IGU02



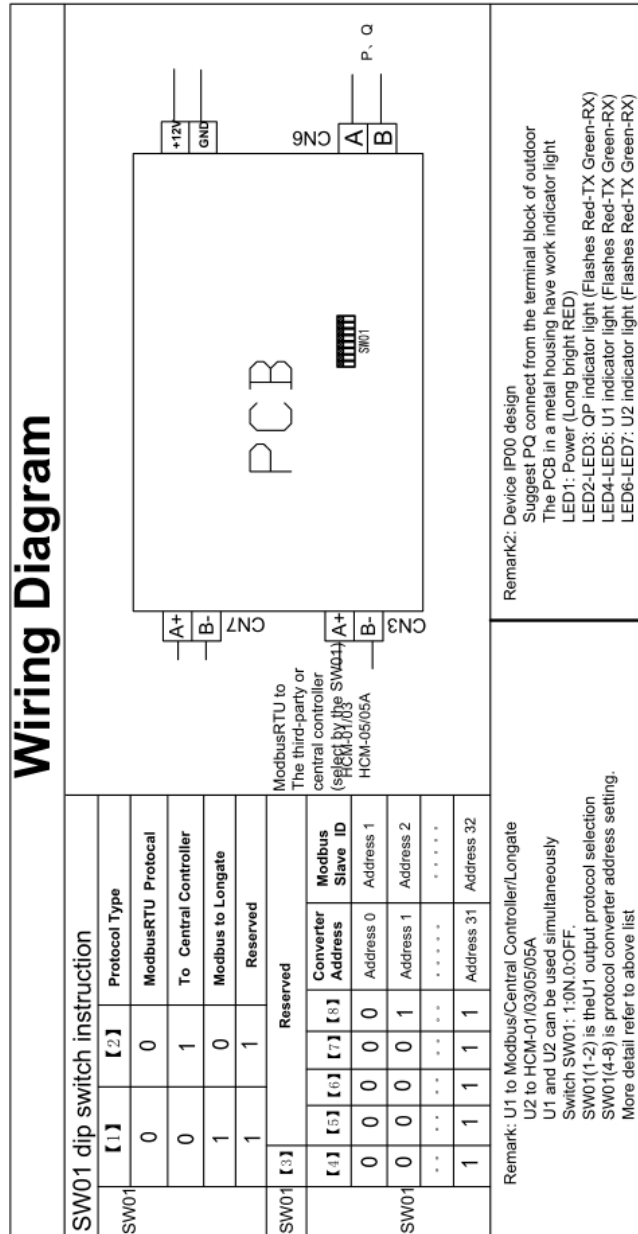
## 3) Dip switch setting for HA-MB164AD, HA-MA164AD

ON indicates 1; OFF indicates 0



Indicates the address of HA-MB164AD or HA-MA164AD, the range is 0-31. The address shown in the above figure is No.0





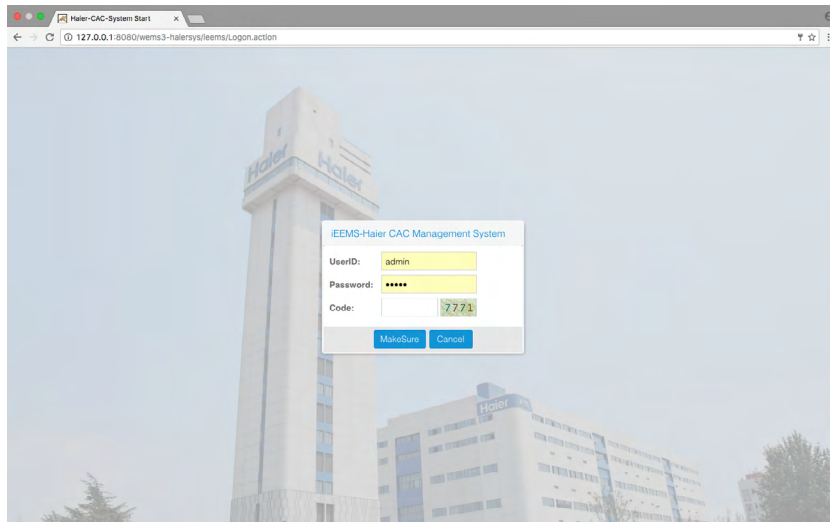
Wiring diagram of HA-MB164AD

- Operation instructions of software

### Login interface of software

It is required that the browser be Chrome or Firefox. When using current PC to login, use <http://127.0.0.1:8080/wems3-haiersys> and press the "Enter" key, you will enter into the login interface. If you use other computers, enter <http://IP:8080/wems3-haiersys> and press the "Enter" key, IP is the IP address of MACmini, MACmini default IP is 192.168.1.101



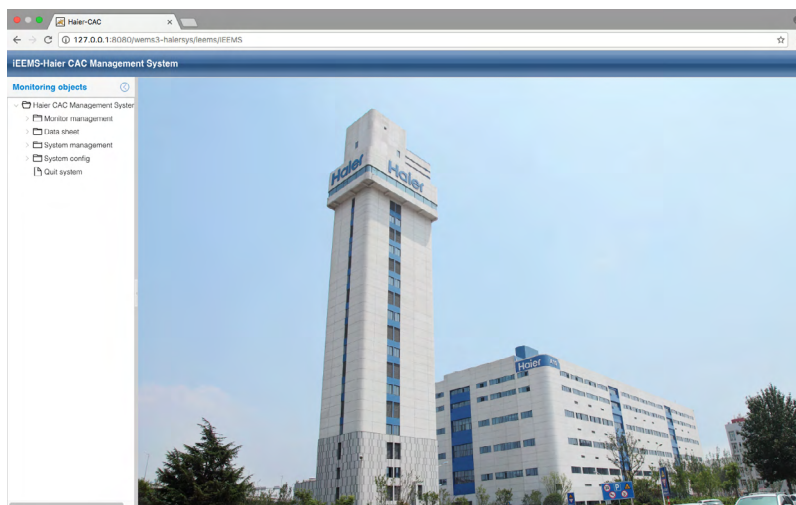


Default user name: admin

Default password: admin

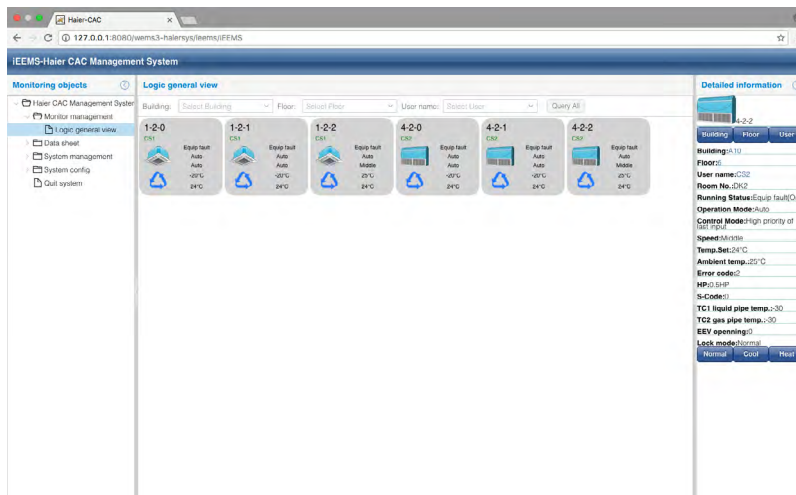
## Monitoring management

### 1. Display interface



### 2. Parameter display and control interface for indoor unit

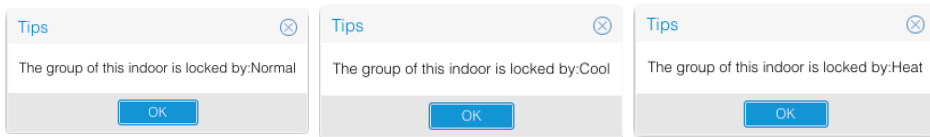
Click the logic general view to see the operation of all the indoor units in the system, as shown in the figure below:



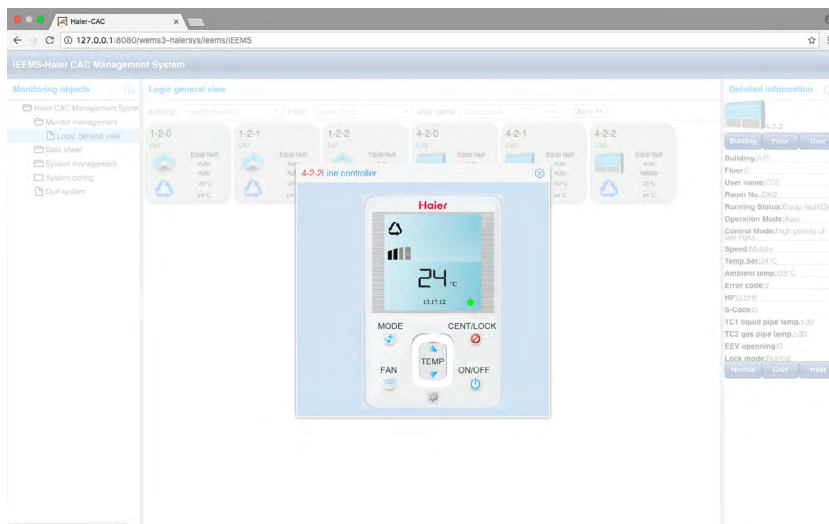
The right side of the page will display the detailed parameters of the selected indoor units, at the same time there are **Building** **Floor** **User** three keys, which can select indoor units by the building, floor and user. Indoor unit operation states display, different colors stand for different operation states



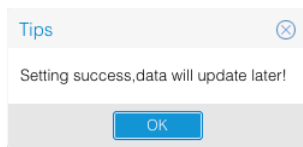
Click the indoor unit, the right side will show the detailed parameters of the indoor unit, which will have three keys show: you can select this indoor unit mode to "Normal mode", "Cool only mode" "Heat only mode" When set to "Normal", the indoor unit can work for all operation modes When set to "Cool", the indoor unit can set the mode to auto, cool, dry, fan. When set to "Heat", the indoor unit can set the mode to auto, heat, fan. If the mode setting is success, will have the successful tips display. And the setting mode also will display at the indoor parameter area.



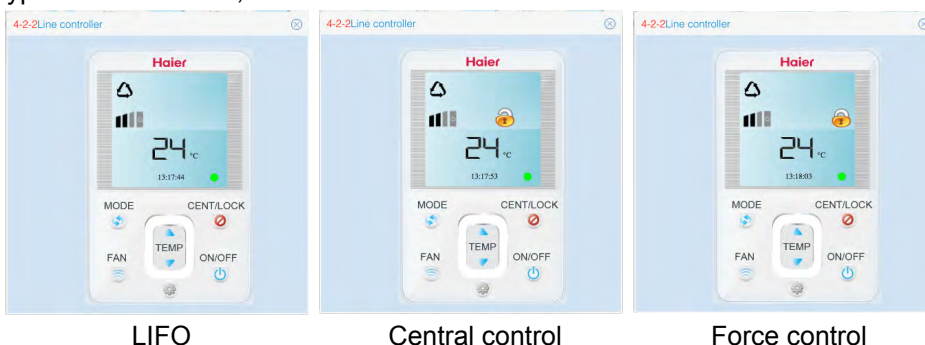
Double-click the indoor unit can change the view to the indoor unit operation view, you can operate the indoor unit parameter and then click the key to send the command.



Success tips will be given as follows after the command is sanded:



In the operation view, you can set the working mode, set the temperature, fan speed, ON/OFF and control mode which have three type selection: LIFO, central control and force control.



LIFO

Central control

Force control



LIFO: the wired controller or remote controller can normally control any parameters of the indoor unit  
 Central control: the wired controller or remote controller can only control ON/OFF the indoor unit, other parameters control is not available.  
 Force control: the wired controller or remote controller cannot control the indoor unit.

### 3. Floor navigation interface

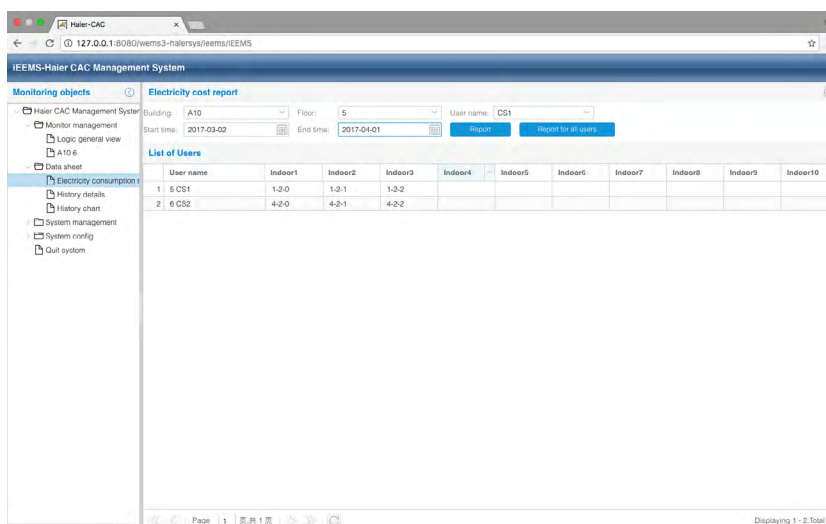
If you configure the floor navigation interface, in the monitoring management will show the already configured floor navigation interface, in the floor navigation can view the current state or control indoor operating parameters. The configuration of the floor navigation interface refers to the steps of 3.5.3 floor map configuration.



## Data report

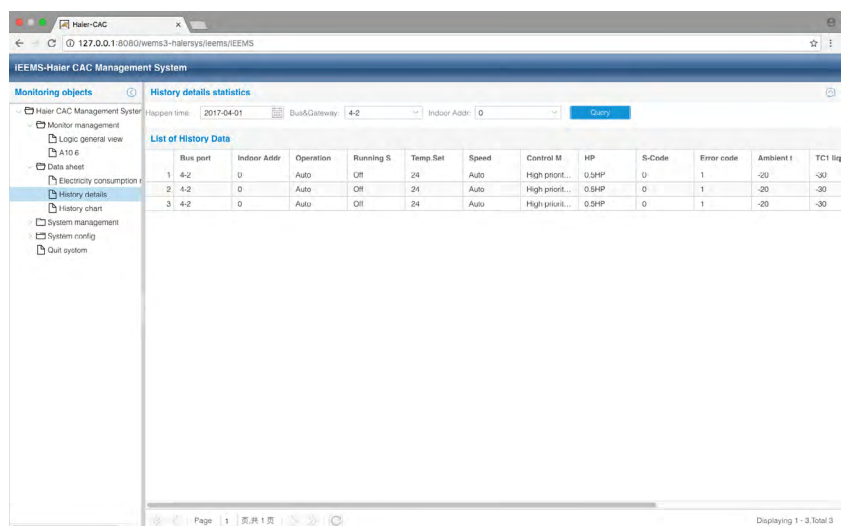
### 1. Electricity consumption report

Click Electricity consumption report to the report settings interface, the interface is divided into two parts: electricity cost report and list of users.



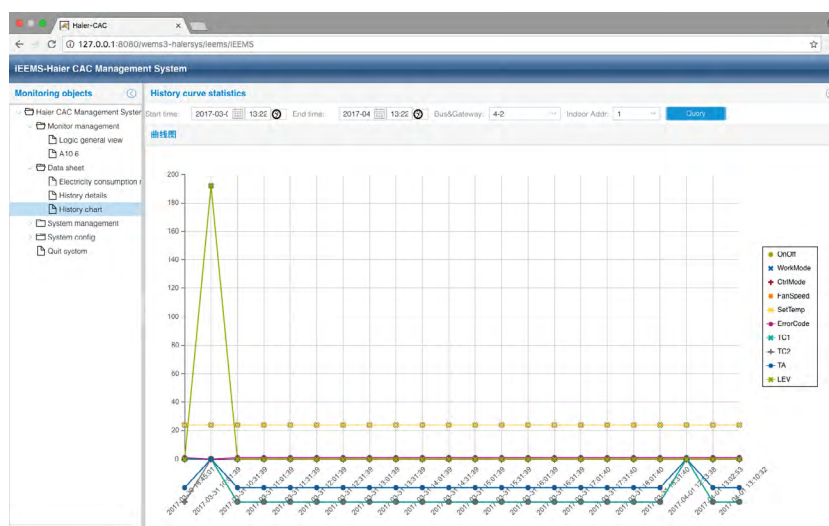
The electricity cost report section can be set by setting the start/end time and the building, floor, and user name, click the **Report** to view the indoor in the period of the electricity cost report of the user, or click **Report for all users** to view all of the indoor in the period of the electricity cost report. The list of users can show the indoor units for each user.

## 2. History details



Select the Happen time, Bus&Gateway and indoor address, then click **Query**. Can check all the command details for the select indoor unit.

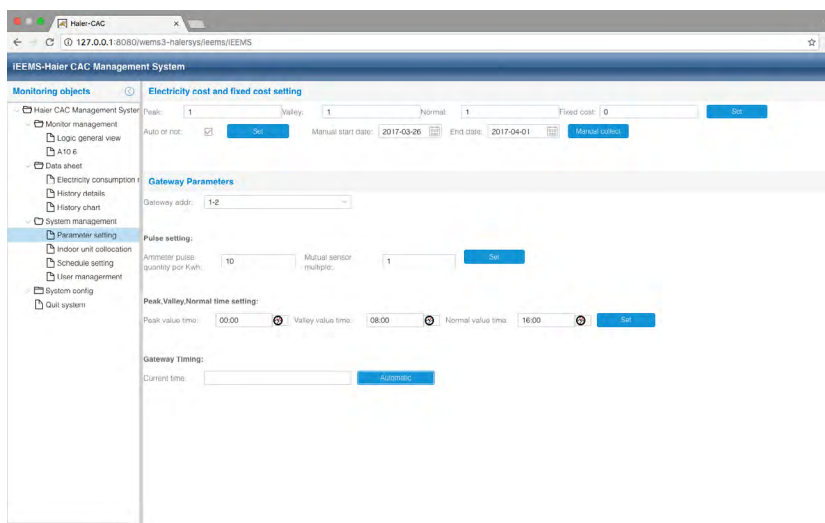
## 3. History chart



Select the Start time, End time, Bus&Gateway and indoor unit address, then click **Query**, Can check the history chart details of the selected indoor unit with in the period, also can display or hide the parameter display by the right parameter list.

## System management

### 1. System management



#### Electricity and fixed cost setting:

Set the peak, valley, normal price and fixed cost according to the actual situation in the area. Click "Set" to write the value to the system.

"Auto or not", if select the auto and click the "set", the system will automatically collect the data at 24:00 clock every day, manual collection need to select the manual start date and End date, click the "manual collect", will collect the data and will cover the date which collect by the automatic collection date.

#### Gateway parameters:

select the gateway, and then write the real ammeter pulse in the "Ammeter pulse quantity per kWh".

For example, if the ammeter mark is "200imp / kWh", it means that the ammeter pulse is 200, so write 200 in the "Ammeter pulse quantity per kWh".

If don't use the mutual sensor, write 1 in the mutual sensor multiple, if need use the mutual sensor, need write the actual mutual sensor multiple; for example the mutual sensor marked current ratio: 150/5, so the actual mutual sensor multiple is 30. Write 30 in the mutual sensor multiple and then click the "Set" button to complete the set.

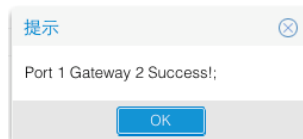
#### Peak, Valley, Normal time setting:

Only can set the value for the peak valley normal value time one time in everyday, the start time of the normal value time is the end time of the valley value time; the start time of the peak value time is the end time of the normal value time; the start time of the valley value time is the end time of the peak value time. And then click the "Set" button to complete the set.

#### Gateway timing:

Click "Automatic" button to synchronization the Gateway time

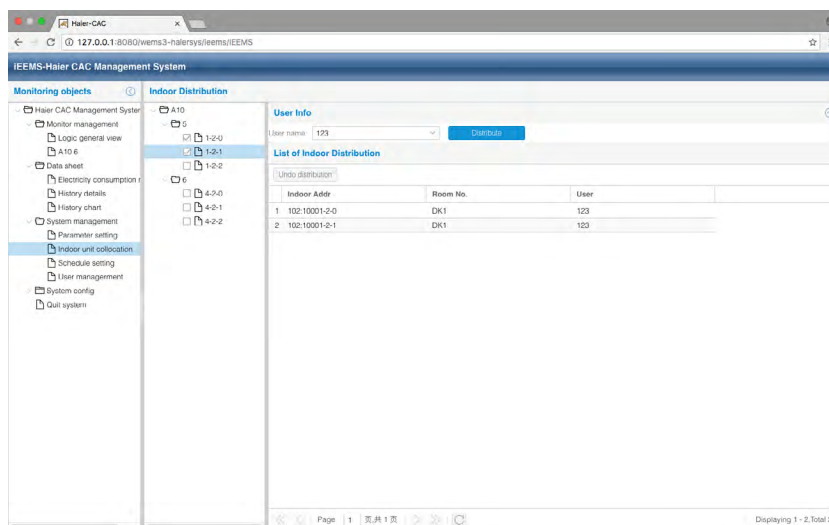
If the operation is successful, will display the success tip.



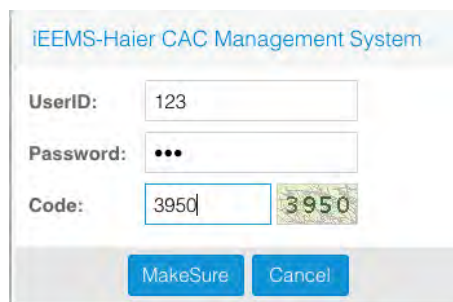
If the operation is unsuccessful, it will display fail.

## 2. Indoor unit collocation

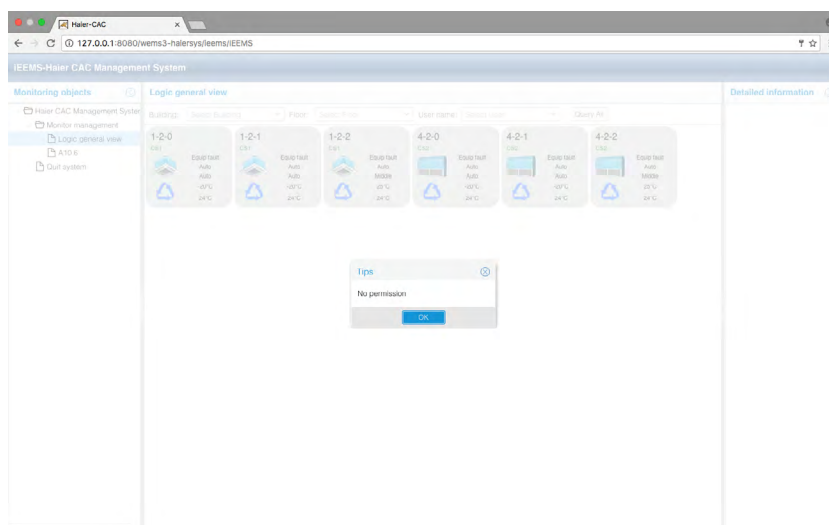
This function is used to distribute indoor units to users for management.



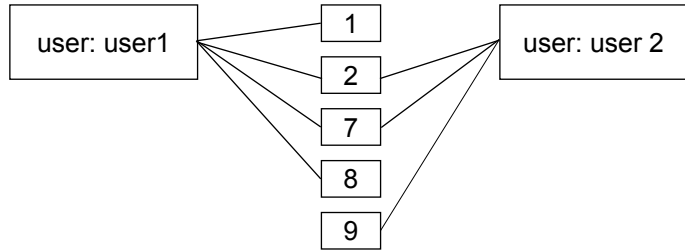
As shown in the figure: Select the user name "123", and select the indoor unit 1-2-1, then click "Distribute" and finish the distribute; also can cancel this indoor unit by click "Un-distribute", As shown in the figure for the distribution 1-2-1, and then use the user name "123" login.



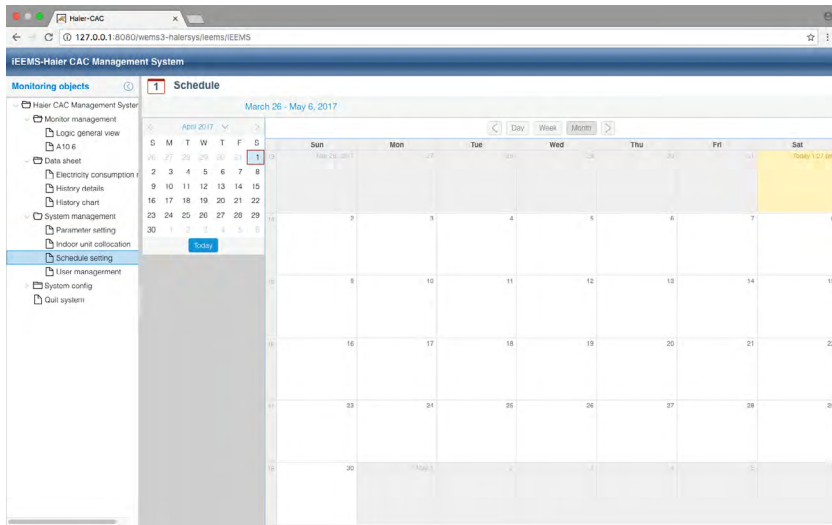
You can control 1-2-1 indoor unit normally, if you control the other indoor units, you will be noticed "No permission".



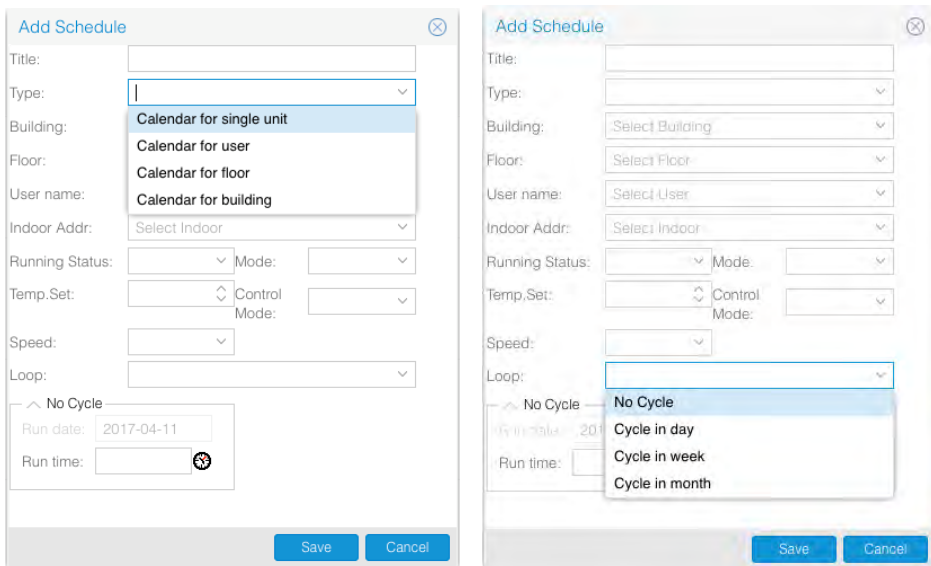
One or more indoor units can be distributed to different user names.  
For example:



### 3. Schedule setting



Schedule setting can show as day, week and month, click to select, and double click the schedule interface to add new schedule.

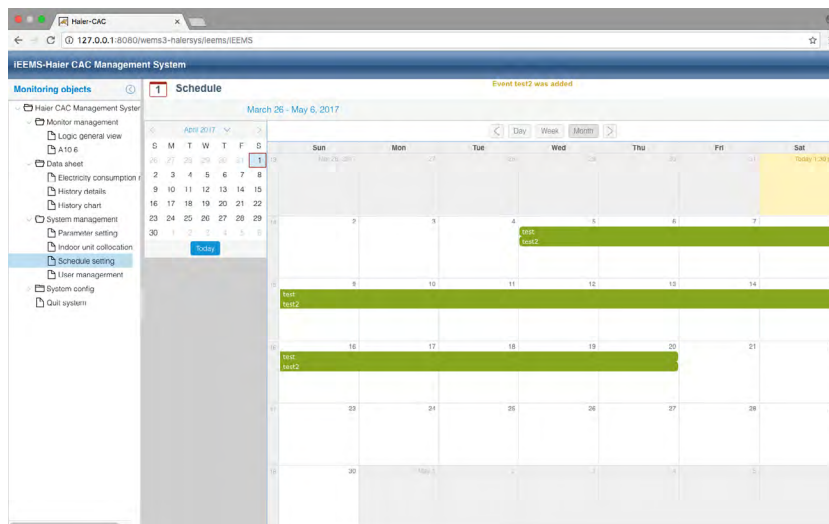


Schedule setting includes such modes as single indoor unit setting, user setting, floor setting, and building setting. The loop model includes no cycle, cycle in day, cycle in week and cycle in month.

In the setting menu, fill in the corresponding schedule data, you can name the schedule by the title, select the type and then add the building, floor, user and indoor address, and then fill in the corresponding operating parameters, and select the loop mode and schedule time, click the "Save" button to complete schedule.

For example:

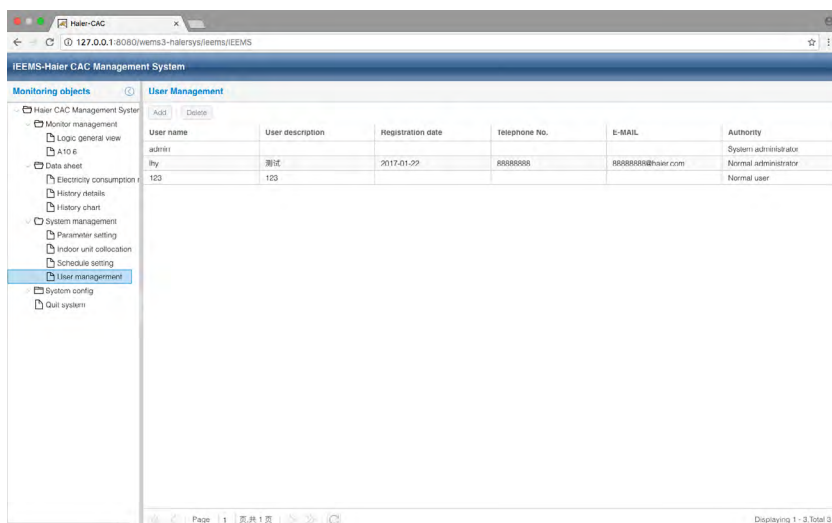
Set 5th April- 15th April, cycle in day, Calendar for user "CS1"; 8:00 switch ON, 18:00 switch off.



The test and test2 in the above figure are records after setting; the test is set as "switch on at 8:00" and the test2 is set as "switch off at 18:00".

#### 4. User management

User Management Authority are System administrator, Normal administrator, and Normal user.



System Administrator: highest level authority

Normal Administrator: high level authority, but cannot input the air conditioning device database

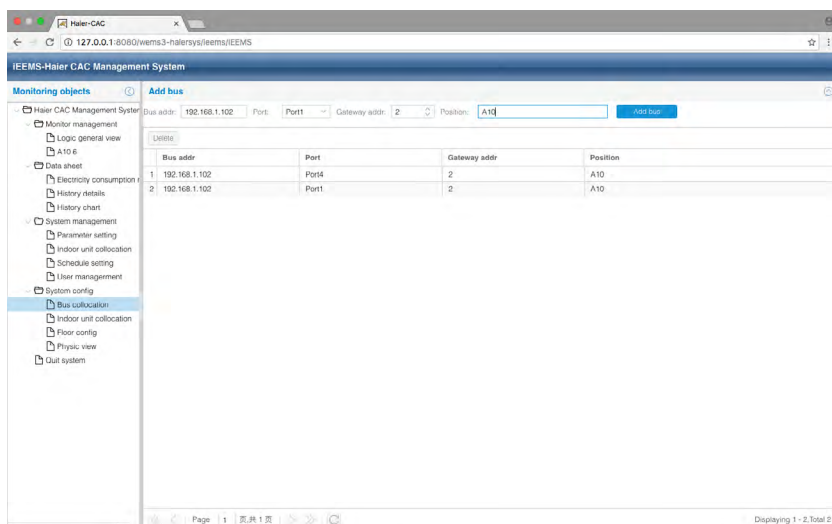
Normal user: normal level authority , only can monitor the distributed indoor units

NO	Item	System Administrator	Normal Administrator	Normal user
1	Logical list	√	√	√
2	Physical list	√	√	√
3	Curve diagram	√	√	√
4	Historical data	√	√	√
5	Charging report form	√	√	×
6	Outdoor unit configuration	√	×	×
7	Indoor unit configuration	√	×	×
8	Parameter setting	√	×	×
9	Schedule setting	√	√	×
10	Indoor unit distribution	√	√	×
11	User management	√	√	×

You can create and assign multiple users as needed, and give different permissions.

## System Configuration

### 1. Bus collocation





Fill in the information in bus address, port, gateway address and position; click “Add bus” to create the new information

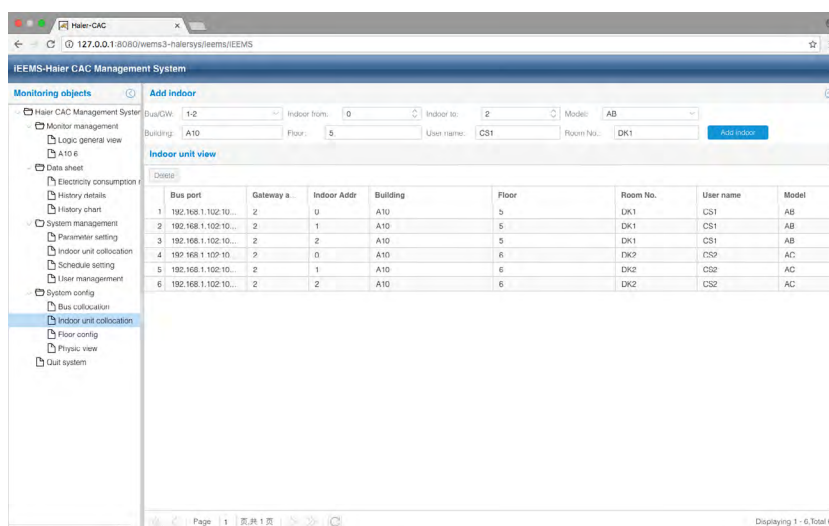
Bus address: the default IP address of serial to Ethernet converter is 192.168.1.102

Port: The port number of the serial to Ethernet converter (1-4)

Gateway address: the communication address of the protocol converter

Position: the system installation position.

## 2. Indoor unit collocation



Add the indoor unit information, click “Add indoor” to create a new indoor unit; you can click “delete” to cancel the created indoor unit. After the completion of “add indoor”, need to restart MAC mini to display the new added indoor unit normally.

Bus/GW: select the converter of indoor unit (displaying X-Y, X stands for Serial-Ethernet converter port, Y stands for protocol converter address)

Indoor from: the select start indoor unit address

Indoor to: the select end indoor unit address

Model : select the indoor type(including cassette, convertible, duct and high wall, you can edit by double click)

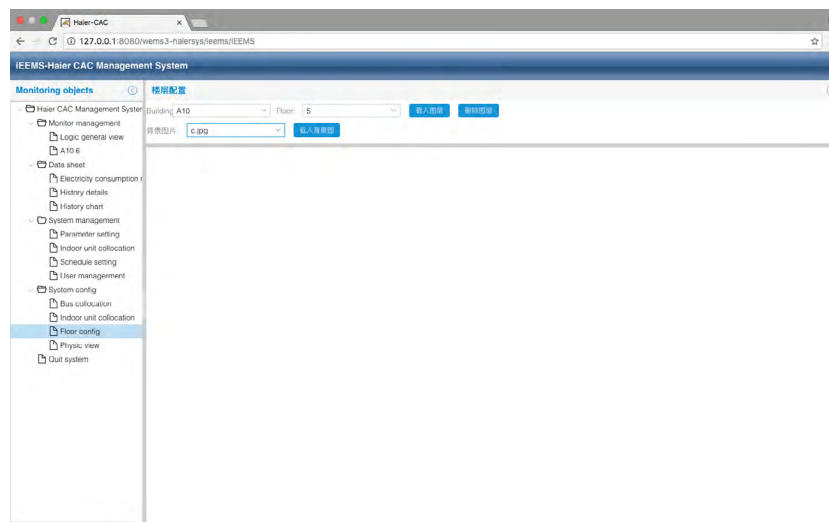
Building: the building name

Floor: the floor number where the indoor unit located

User name: the user name where the indoor unit located (you can edit by double click)

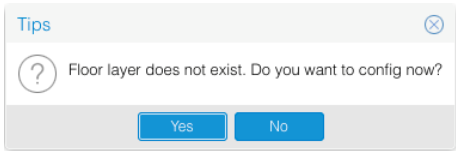
Room No.: the room No. where the indoor unit located (you can edit by double click)

## 3. Floor configuration

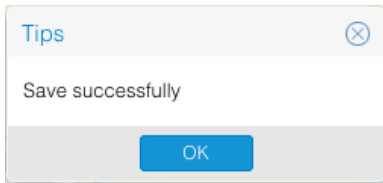




First select the building and floor, click “loading floor”. If there is no floor layer information, the system will notice as below figure:

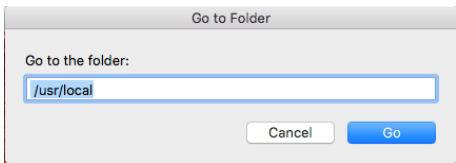
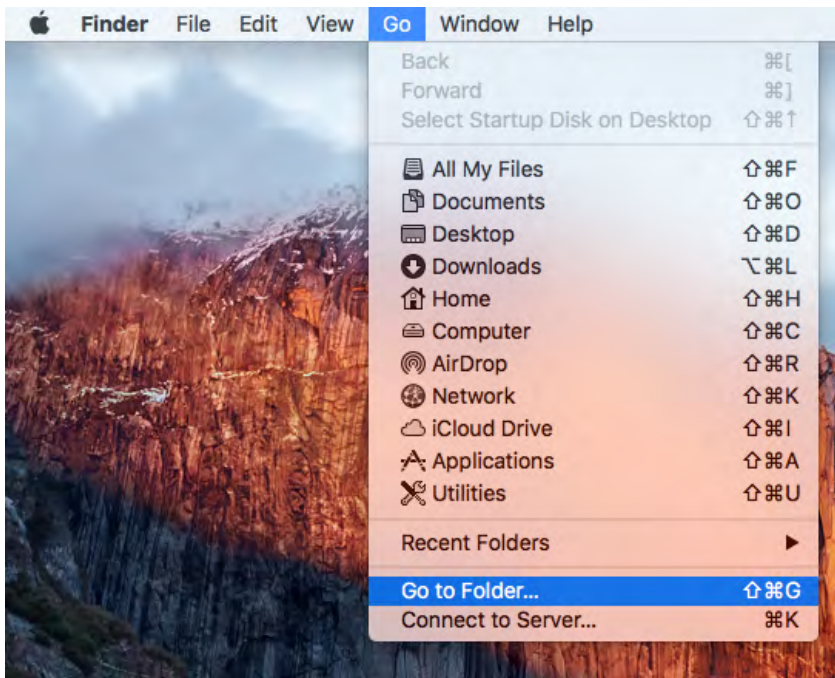


After loading floor, you can select the background picture and click “loading background picture”, then select the indoor and drag it to the actual location in the floor layer. if it's ok, click to save information and show as below figure:



After you save the new layer or delete the layer, you need to restart the browser to display properly  
 Note: The floor picture must be placed in the specified directory (tomcat8/webapps/wems3-haiersys/ieems/app/view/floorcfg/images) before the floor picture configuration, the imported pictures must be BMP, PNG or JPG format , It is recommended to use 1024\*768 resolution picture.

Enter the directory of the specific method is to click on the top of the desktop "Go", select "Go to Folder...", enter "/ user /local" Enter, as shown below:



Will enter the folder, find tomcat8/webapps/wems3-haiersys/ieems/app/view/floorcfg/images directory, the floor picture can be import into this directory.

## 4. Physic view

Monitoring objects		Physical connection View									
		Bus GW	Indoor1	Indoor2	Indoor3	Indoor4	Indoor5	Indoor6	Indoor7	Indoor8	Indoor9
Haier CAC Management System	Addr Type	4-2	0 / CS2 AC	1 / CS2 AC	2 / CS2 AC						
Monitor management	Addr Type	1-2	0 / CS1 AB	1 / CS1 AB	2 / CS1 AB						
Data sheet											
System management											
System config											
Bus collocation											
Indoor unit collocation											
Floor config											
Physic view											
Quit system											

After the device import is complete, the physical connection view will display the indoor unit information.

- Preparation and attention of device information import

### Preparation and design example

Have one five floors office building is provided with a total of 20 air conditioner system (4 systems each floor).

Analysis:

1. One air conditioner system connect with one protocol converter
2. One serial-Ethernet converter port can be connected Max.20 protocol converter; thus two ports are required, one is connected with 15 protocol converters and the other is connected with 5 protocol converters.

Note: if have not so many protocol converters like this example, in order to make the wiring more convenient, these 20 gateways can be divided into 15+5, or 5+5+5+5; however, one port cannot be connected with more than 20 protocol converter.

#### The following information should be known before design:

1. What is the central address of this indoor unit?
2. What is the room No. (Installation location) of this indoor unit?
3. What is the floor for the indoor unit?
4. What is the user name of the room for this indoor unit?
5. What is the address of the protocol converter connected with the outdoor system which this indoor unit belong to?
6. What is the port (RS485 bus port) No. for the gateway connected with the outdoor system which this indoor unit belong to?

The obtained information for the above items is tabulated as follows:

Building name: Office Building

Indoor unit information for each room						
Room name	Floor	Protocol converter address	Central address of indoor unit	Group address of wired controller	Room no.	Indoor unit type
Repair office for signal	—	1	0	0	100	Cassette
West training room	—	1	1	0	101	Cassette
East training room	—	1	2	0	102	Cassette
Material & tool room for signal	—	2	0	0	103	Cassette
Signal on-car test chamber	—	2	1	0	104	Cassette
Director office	—	2	2	0	104	Cassette
Deputy director office	—	2	3	0	105	Cassette
East shop manager office	—	2	4	0	106	Cassette
West shop manager office	—	2	5	1	107	Cassette
Control room	—	3	0	0	108	Cassette
Maintenance room	—	3	1	0	109	Cassette
Maintenance team room	—	3	2	0	110	Cassette
motorcade	—	3	3	0	111	Cassette
Power distribution room	—	3	4	0	112	Cassette
Power distribution room	—	3	5	0	113	Cassette
Warehouse	—	3	6	0	114	Cassette
File room	—	3	7	0	115	Cassette
Conference room1	—	3	8	0	116	Cassette
Conference room2	—	3	9	1	117	Cassette

After get the above information, you can import the device, first set the bus configuration and then set the indoor unit configuration, in the case of demand for floor map configuration, the specific configuration operation with reference to 3.2.11,3.2.12 and 3.2.13.

Note: After finish the information import, Need to restart your computer, then log in again.

### Configuration issue

1. The indoor unit list should not has the mistake, if have the mistake, the control of the indoor unit is not the target indoor unit. The electricity consumption is not for the target indoor unit
2. Complete the setting, need close the program and restart the program, you must reload the browser in order to correctly display the newly import indoor unit information.
3. Time synchronization: After the equipment is connected, need time synchronization, the time of the converter is the same as the time of the computer system
4. Protocol converter pulse set: Different manufacturers of the ammeter, different pulse number

• Requirements for pulse ammeter

Ammeter specification request:

1. Basic request :3 phase 4 wires pulse ammeter:

A. The ammeter can calculate the 3 phase AC power;

B. Ammeter can finish some certain pulse quantity divide for one kWh power electricity ;

C. Pulse signal 's breadth value is DC 5V, and each signal width must bigger than 80ms.

D. Pulse signal is no-source method ,,that is need outside should supply power to the ammeter.

2. The ammeter have mechanical type and electronic type two type, if they can meet the above requirement ,we can use it Select the ammeter rated current according to outdoor unit total power consumptions.

The connections have three methods:

1)Direct connect;

2)Connect by current mutual inductance type;

3)Connect by current, voltage mutual inductance type (not widely used);

Note: direct type can save more cost than others, but when the current is too big (like bigger than 100A), need use mutual inductance type;

3.The meter range:

Total outdoor capacity (HP)	Ammeter meter range
≤20	10~60A
≤30	20~80A
≤40	30~100A
≤48	30~120A



Direct connection  
200Pulse/kWh  
Pulse width 80+/-20ms  
Ammeter Capacity 30(100)A

- External Interface and Property configuration

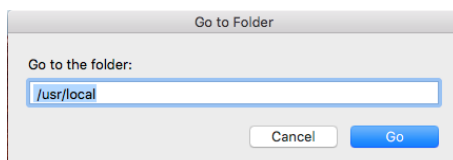
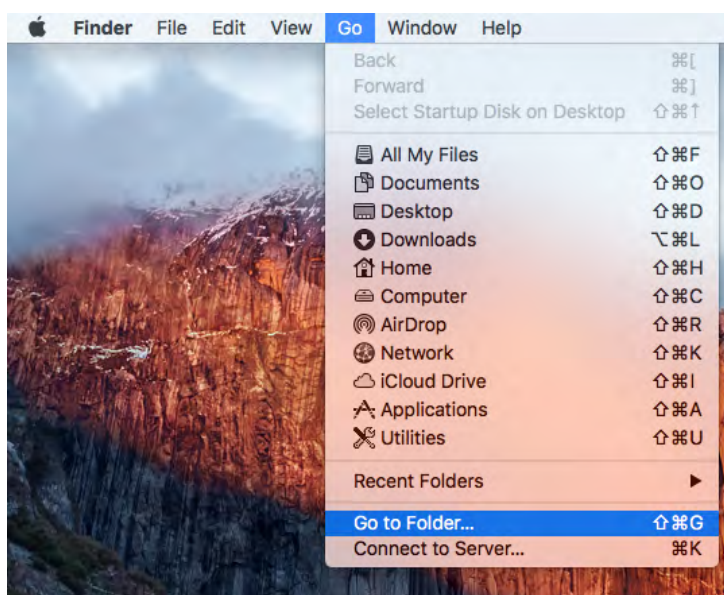
## Port setting

HCM - 03 provides the Modbus IP and Bacnet IP two third-party interface, can only choose one to use

Note: if need to provide third-party interface or more than one client-side visit, the customer need add routing or switchboard to connect, and adjust the MACmini and serial-Ethernet converter and PC in the same network

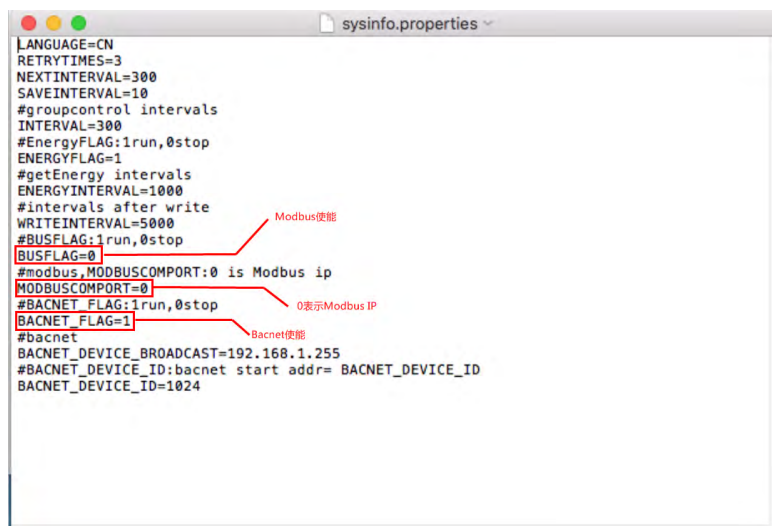
The factory default Settings is the Modbus IP Settings, the user can according to the actual demand to change the third-party interface type, Property configuration file name is " sysinfo.properties ", file directory is tomcat8/webapps/wems3-haiersys/WEB-INF/classes, enter method is same as 3.2.13 floor figure configuration into the floor picture directory.

The method to enter the directory is: click the "Go" which is on desktop, "Go to Folder", import "/ user/local" then click enter key, as shown in the figure below:



Above operation will enter the root directory of the application documents, according to the above directory to find the file "sysinfo.properties." Double-click to enter the properties file.

The setting content of the Property configuration file as shown in the following figures



When select the Modbus IP protocol ,  
setting BUSFLAG=1

MODBUSCOMPORT=0

BACNET\_FLAG=0

When select the Bacnet IP protocol ,  
setting BUSFLAG=0

MODBUSCOMPORT=0

BACNET\_FLAG=1

The name of the parameter in Property configuration file is "BACNET\_DEVICE\_BROADCAST"

Factory defaults is 192.168.1.255, when using a third-party interface BACNET IP, if amend the MACmini IP into other segments, you will need to modify the parameters to ensure that in the same network segment.

Such as: the MACmini IP is modified to 192.168.0.100, modify the parameters of "BACNET\_DEVICE\_BROADCAST" to 192.168.0.255

Note: after modify the attribute parameters need reset the MAC mini, can only be run in accordance with the new set of properties.

## Modbus IP register address table

1. Modbus IP is the IP address of the MACmini devices (factory default is 192.168.1.101) port number is 5502

2.SlaveID component:

Serial-Ethernet port number is(1-4)\*20+protocol converter address.

Such as: Serial-Ethernet port number is 1, protocol converter address is 1, Slave ID is 1\*20+1=21.

3.Read using function code 03.

	Address		
Switch on/off of indoor unit #1	101	1 : switch-on ; 0 : switch-off	Read/Write
Switch on/off of indoor unit #2	102	1 : switch-on ; 0 : switch-off	Read/Write
—————	—————	1 : switch-on ; 0 : switch-off	Read/Write
Switch on/off of indoor unit #39	139	1 : switch-on ; 0 : switch-off	Read/Write
Switch on/off of indoor unit #40	140	1 : switch-on ; 0 : switch-off	Read/Write
Operating mode of indoor unit #1	201	0:auto; 1: fan 2 cooling; 3: dehumidifying; 4:heating	Read/Write
Operating mode of indoor unit #2	202		Read/Write
—————	—————		Read/Write
Operating mode of indoor unit #39	239		Read/Write
Operating mode of indoor unit #40	240		Read/Write
Setting temperature of indoor unit #1	301	16--30	Read/Write
Setting temperature of indoor unit #2	302	16--30	Read/Write
—————	—————	16--30	Read/Write
Setting temperature of indoor unit #39	339	16--30	Read/Write
Setting temperature of indoor unit #40	340	16--30	Read/Write
Control mode of indoor unit #1	401	0, 1: Final command takes precedence; 2: Centralized control; 3: Forced control	Read/Write
Control mode of indoor unit #2	402		Read/Write
—————	—————		Read/Write
Control mode of indoor unit #39	439		Read/Write
Control mode of indoor unit #40	440		Read/Write



	Address		
Actual air speed of indoor unit #1	501	3: High speed; 2: Medium speed; 1: Low speed; 0: Automatic	Read/Write
Actual air speed of indoor unit #2	502		Read/Write
—————			Read/Write
Actual air speed of indoor unit #39	539		Read/Write
Actual air speed of indoor unit #40	540		Read/Write
Failure code of indoor unit #1	601		Read only
Failure code of indoor unit #2	602		Read only
—————			Read only
Failure code of indoor unit #39	639		Read only
Failure code of indoor unit #40	640		Read only
Indoor ambient temperature for indoor unit #1	701		Read only
Indoor ambient temperature for indoor unit #2	702		Read only
—————			Read only
Indoor ambient temperature for indoor unit #39	739		Read only
Indoor ambient temperature for indoor unit #40	740		Read only
Gas pipe temperature of indoor unit #1	801		Read only
Gas pipe temperature of indoor unit #2	802		Read only
—————			Read only
Gas pipe temperature of indoor unit #39	839		Read only
Gas pipe temperature of indoor unit #40	840		Read only
Liquid pipe temperature of indoor unit #1	901		Read only
Liquid pipe temperature of indoor unit #2	902		Read only
—————			Read only
Liquid pipe temperature of indoor unit #39	939		Read only
Liquid pipe temperature of indoor unit #40	940		Read only

## Bacnet IP register address table


Bacnet IP is the IP address of MACmini device (factory default is 192.168.1.101)

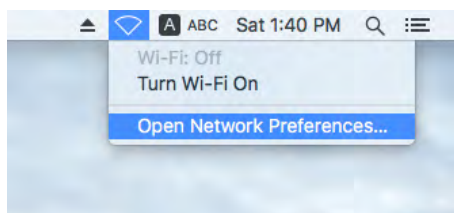
The XX\_XX\_XX after register address representative “port number (1-4)\_gateway address \_indoor address ”in turns.

Register ADDRESS	Point Name	State description	Point Type
Indoor_OnOff_XX_XX_XX	ON/ OFF control	1:OFF 2:ON	MSO
Indoor_OnOff_XX_XX_XX	ON/ OFF state	OFF ON	BI
Indoor_Mode_XX_XX_XX	Operation mode state	1:Auto2: Fan3: Cool4: Dry5: Heat6:Other	MSI
Indoor_Mode_XX_XX_XX	Operation mode setting	1:Auto2: Fan3: Cool4: Dry5: Heat6:Other	MSO
Indoor_FanSpeed_XX_XX_XX	Air speed state	1:Auto2: Low3:Normal4: High5:Other	MSI
Indoor_FanSpeed_XX_XX_XX	Air speed setting	1:Auto2: Low3:Normal4: High5:Other	MSO
Indoor_Temp_XX_XX_XX	Indoor ambient temperature		AI
Indoor_SetTemp_XX_XX_XX	Setting temperature state	16--30	AI
Indoor_SetTemp_XX_XX_XX	Setting temperature control	16--30	AO
Indoor_ControlMode_XX_XX_XX	Control mode state	1: High priority of last input 2: Central Control 3: Compulsive Control 4: Other	MSI
Indoor_ControlMode_XX_XX_XX	Control mode setting	1: High priority of last input 2: Central Control 3: Compulsive Control 4: Other	AO
Indoor_ErrorCode_XX_XX_XX	Failure code		AV

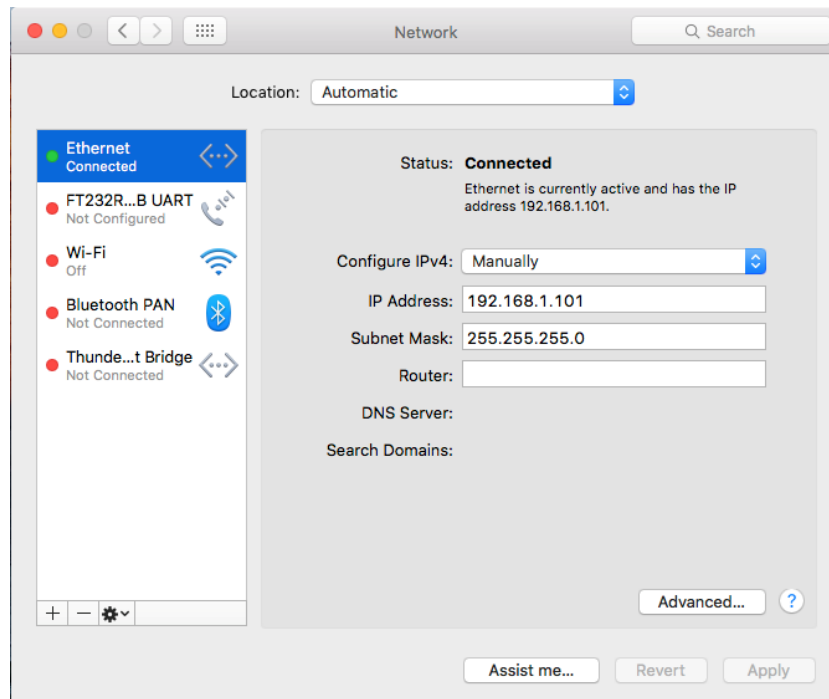
## MAC mini computer IP change

The factory default IP address of MAC mini computer is 192.168.1.101, if the user need to modify the IP address, needs to modify the Serial-Ethernet convertor IP at the same time, ensure that MAC mini computer and the convertor IP are in the same network segment, The modified method of the MAC mini computer IP address is as follows:

Click the internet icon  and select the “Open Network Preferences setting”, select Ethernet Connected and set the parameters according to the requirements. as shown in the following figure.







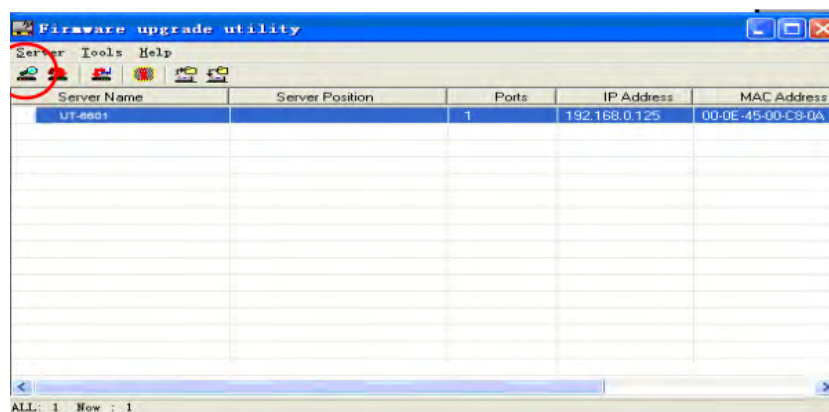
## Serial –Ethernet converter setting

Serial –Ethernet converter default IP address is 192.168.1.102.

If the user needs modify the MACmini computer IP, also needs to modify Serial –Ethernet converter IP at the same time, ensure that MAC mini computer and the Serial –Ethernet converter are in the same network segment.

There is a small CD in the packing box, CD contains Settings manual and setting software, the specific operation method is shown below (also can be reference to manual in CD) :

1. Connect the computer and serial-Ethernet converter port by network cable, startup the attached software "upgrade" (see the picture), select "Server - search all devices" or click the red circle position, can find all UT - 66 - xx series IP address and its basic information; Click and select the device, select Tools - Temporary change IP address, modify IP address, IP address in the same network segment with the serial port server connected switch, such as " switch IP is 192.168.1.1, then the IP address of the server should be 192.168.1. XXX".



2. Change the computer IP to the same network segment with the above modified IP, open the IE browser (must use IE browser), input the modified IP address, can enter the WEB management interface of serial-Ethernet converter , input the modified IP address in " Server Menu - Server Information - Ethernet IP Address" then click the "Submit" and save the page.

▶ Save Configurations

3. After modify IP address, open the IE browser (must use IE browser), enter the WEB management interface, select "Serial Port Communication Settings---Port1" (as following picture) setting the serial port server parameter such as Baud rate, Type of Connection, Data Bits, top Bits, Parity and so on to ensure the parameters in according with the terminal equipments. then click the "Submit"; Select Port2, port3 to do the same setting, also can check the "Apply to all ports", you can Apply Port1 Settings to all Port .

**Port 1 Settings**

Baudrate	4800	Type of Connection	RS485_HALF
Data Bits	8	Stop Bits	1
Parity	n	Flow Control	none

Advanced Setting

Apply to all ports

**Port 2 Settings**

Baudrate	4800	Type of Connection	RS485_HALF
Data Bits	8	Stop Bits	1
Parity	n	Flow Control	none

Advanced Setting

Apply to all ports

**Port 3 Settings**

Baudrate	4800	Type of Connection	RS485_HALF
Data Bits	8	Stop Bits	1
Parity	n	Flow Control	none

Advanced Setting

Apply to all ports

**Port 4 Settings**

Baudrate	4800	Type of Connection	RS485_HALF
Data Bits	8	Stop Bits	1
Parity	n	Flow Control	none

Advanced Setting

Apply to all ports

4. Select the Port1, Port2, Port3, Port4 which are under the "Mode" to set (see the picture), set as the TCP/UDP socket, basic parameters can be default, each parameter function can refer to chapter 2 specification parameters in the CD file UT - 66 - xx series serial port server manual; the parameter of Port1 to Port4 four port are basically the same, the difference in the local port, Port1 be set to 10001, Port2 be set to 10002, Port3 be set to 10003, Port4 be set to 10004, after modified click Submit. After complete all the setting, be sure to remember to click "Save Configurations" to Save Settings, then click "Reboot Server" to restart the device.

## TCP/IP CONVERTER

Server Menu

- Server Information
- Serial Port Communication Settings
  - Port1
  - Port2
  - Port3
  - Port4
- Mode
  - Port1
  - Port2
  - Port3
  - Port4
- Route Table
- Host Table
- Authority Management
- Users
- System Stats
- Reset Ports
- Save Configurations
- Reboot Server

### Port 1 Mode Setting

Communication Mode: TCP/UDP Socket

TCP Data Mode: raw      Local Port: 10001

CR As: cr      LF As: lf

Sessions: 1      Strip NULL: no

Authentication: none      Auth Prompt: no

SERVER First: no

Session	Protocol	Peer Host	Peer Port	Connect	Disconnect	Freetime
1	TCP server			always	none	
2	TCP server			always	none	
3	TCP server			always	none	
4	TCP server			always	none	
5	TCP server			always	none	
6	TCP server			always	none	

Apply to all ports

## TCP/IP CONVERTER

Server Menu

- Server Information
- Serial Port Communication Settings
  - Port1
  - Port2
  - Port3
  - Port4
- Mode
  - Port1
  - Port2
  - Port3
  - Port4
- Route Table
- Host Table
- Authority Management
- Users
- System Stats
- Reset Ports
- Save Configurations
- Reboot Server

### Port 2 Mode Setting

Communication Mode: TCP/UDP Socket

TCP Data Mode: raw      Local Port: 10002

CR As: cr      LF As: lf

Sessions: 1      Strip NULL: no

Authentication: none      Auth Prompt: no

SERVER First: no

Session	Protocol	Peer Host	Peer Port	Connect	Disconnect	Freetime
1	TCP server			always	none	
2	TCP server			always	none	
3	TCP server			always	none	
4	TCP server			always	none	
5	TCP server			always	none	
6	TCP server			always	none	

Apply to all ports

## TCP/IP CONVERTER

- Server Menu
- Server Information
- Serial Port Communication Settings
  - Port1
  - Port2
  - Port3
  - Port4
- Mode
  - Port1
  - Port2
  - Port3
  - Port4
- Route Table
- Host Table
- Authority Management
- Users
- System Stats
- Reset Ports
- Save Configurations
- Reboot Server

### Port 3 Mode Setting

Communication Mode: TCP/UDP Socket

TCP Data Mode: raw Local Port: 10003

CR As: cr LF As: lf

Sessions: 1 Strip NULL: no

Authentication: none Auth Prompt: no

SERVER First: no

Session	Protocol	Peer Host	Peer Port	Connect	Disconnect	Freetime
1	TCP server			always	none	
2	TCP server			always	none	
3	TCP server			always	none	
4	TCP server			always	none	
5	TCP server			always	none	
6	TCP server			always	none	

Apply to all ports

## TCP/IP CONVERTER

- Server Menu
- Server Information
- Serial Port Communication Settings
  - Port1
  - Port2
  - Port3
  - Port4
- Mode
  - Port1
  - Port2
  - Port3
  - Port4
- Route Table
- Host Table
- Authority Management
- Users
- System Stats
- Reset Ports
- Save Configurations
- Reboot Server

### Port 4 Mode Setting

Communication Mode: TCP/UDP Socket

TCP Data Mode: raw Local Port: 10004

CR As: cr LF As: lf

Sessions: 1 Strip NULL: no

Authentication: none Auth Prompt: no

SERVER First: no

Session	Protocol	Peer Host	Peer Port	Connect	Disconnect	Freetime
1	TCP server			always	none	
2	TCP server			always	none	
3	TCP server			always	none	
4	TCP server			always	none	
5	TCP server			always	none	
6	TCP server			always	none	

Apply to all ports

## 5.3 HCM-05A



MRV	LCAC			
	Smart Power	Super Match	R410A ON/OFF	R22 ON/OFF
√	√	√		

- Remote monitoring version
- Third party interface: BACnet ip
- Max. 500 indoor units can be controlled for f HCM-05A
- Max. 32 systems. Each system requires one HA-M\*1.
- Max. 40 indoor units for each HA-M\*1
- Operation status setting & monitoring.
- Schedule setting
- Multi user management with different authorized levels
- Operation and Error history log
- Power consumption report when connected with IGU02

This installation and configuration guide covers the mounting and wiring of the HCM-05A controller, and how to configure VRF Supervisor system. It assumes that you are an engineer, technician, or service person who is performing control system installation. Instructions in this guide apply to the following products:

#### Models Description

HCM-05A	DIN mount HCM-05 series controller, powered by separate plug-in power supply module or wall mount AC power adapter. Controller supports optional external I/O expansion modules and internal communications option cards.
NPB-PWR-UN	90–263Vac universal input/15Vdc output power module, DIN mountable.
WPB-XXX	Wall-mount universal AC power adapter, with different models available, Where -XXX is either: -US, -EUR, or -UK (vary by AC wall plug).

## Related Documentation

For more information on configuring and using the HCM-05A controller, consult the following documents:

- HCM-05A\_InstallGuide

## Preparation

Unpack the controller and inspect the package contents for damaged or missing components. If damaged, notify the appropriate carrier at once and return any damaged components for immediate repair or replacement.

- Included in this Package
- Material and Tools Required

## Included in this Package

Included in this package you should find the following items:

- HCM-05A controller
- HCM-05A Mounting and Wiring Instructions
- A hardware bag containing the following items:
  - Two (2) 6-position screw terminal plugs, one for integral contact inputs (door tamper, UPS battery OK, UPS AC present), one end-mount to wire RS-485/power to optional remote expansion devices.
  - One (1) 2-position screw terminal plug for external sealed lead-acid (SLA) rechargeable battery (not provided).
  - One (1) grounding wire, with quick-disconnect 0.187" female connector.

#### Material and Tools Required

The following supplies and tools are typically required for installation:

- NPB-PWR-UN universal AC power supply module, 90-263 Vac input, 15Vdc 30W output, DIN-mount capable, with grounding wire.
- Alternatively, a WPM-XXX wall-mount AC adapter can power the controller only. You must cut off the adapter's barrel plug end, and then wire leads into the controller's end connector. A multimeter is needed to check polarity.
- DIN rail, type NS35/7.5 (35mm x 7.5mm) and DIN rail end-clips (stop clips), unless using panel mounting method with screws through mounting tabs.
  - • Suitable tools and fasteners for mounting unit and accessories.
  - • #2 phillips screwdriver: used to install and remove an optional option card.
  - • Small flat-blade screwdriver: used for making wiring connections to removable screw terminal plugs.
  - • (Optional) One or two 12V sealed-lead-acid (SLA) rechargeable backup batteries, with wire harness for connecting to the 2-position connector on the unit. Should be sized as required by the system. See "External 12V Backup Battery".

## Precautions

This guide uses the following warning and caution conventions:



### Caution

Cautions remind the reader to be careful. They alert readers to situations where there is a chance that the reader might perform an action that cannot be undone, might receive unexpected results, or might lose data. Cautions contain an explanation of why the action is potentially problematic.



### Warning


Warnings alert the reader to proceed with extreme care. They alert readers to situations where there is a chance that the reader might do something that can result in personal injury or equipment damage. Warnings contain an explanation of why the action is potentially dangerous.

## Safety Precautions

The following items are warnings of a general nature relating to the installation and start-up of the HCM-05A controller. Be sure to heed these warnings to prevent personal injury or equipment damage.



### Warning

- A 120Vac or 240Vac circuit powers the NPB-PWR-UN power supply for the controller.
- 15Vdc  input (DC only) to controller.
- Disconnect power before installation or servicing to prevent electrical shock or equipment damage.
- Make all connections in accordance with national and local electrical codes. Use copper conductors only.
- To reduce the risk of fire or electrical shock, install in a controlled environment relatively free of contaminants.
- This device is only intended for use as a monitoring and control device. To prevent data loss or equipment damage, do not use it for any other purpose.

## Static Discharge Precautions

Static charges produce voltages high enough to damage electronic components. The microprocessors and associated circuitry within a HCM-05A controller are sensitive to static discharge. Follow these precautions when installing, servicing, or operating the system:



### Caution

- Work in a static-free area.
- Discharge any static electricity you may have accumulated. Discharge static electricity by touching a known, securely grounded object. Do not handle the printed circuit board (PCB) without proper protection against static discharge. Use a wrist strap when handling PCBs. The wrist strap clamp must be secured to earth ground.

## Battery Precautions

- The NiMH battery used in this device may present a risk of fire or chemical burn if mistreated.
- Do not disassemble, heat above 122°F (50°C), or incinerate. Replace battery pack with type 10SN-2/3AA60H-W-J1 (NPB-J700-BATT) only. Use of another battery may present a risk of fire or explosion.
- Do not disassemble, heat above 122°F (50°C), or incinerate. Replace battery pack with type 10SN-2/3AA60H-W-J1 (NPB-J700-BATT) only. Use of another battery may present a risk

- of fire or explosion.
- Dispose of used battery promptly. Keep away from children. Do not disassemble and do not dispose of in fire.
- Replace external backup battery with Listed Power Source Battery Only.

## Mounting

Mount the controller in a location that allows clearance for wiring, servicing, and module removal.

Note:

- This product is intended for indoor use only. The unit should not be exposed to ambient conditions outside of the range of 32°F (0°C) to 122°F (50°C), or relative humidity outside the range of 10 to 90% at 77°F (25°C), non-condensing.

Avoid mounting the controller in a manner that would make it difficult to operate the disconnect device.

- Before mounting the controller, install any option card(s)

Additional mounting information applies, as follows:

- Environmental Requirements
- Physical Mounting

## Environmental Requirements

Note the following requirements for the HCM-05A mounting location:

- If mounting inside an enclosure, that enclosure should be designed to keep the unit within its required operating range considering a 20-watt dissipation by the controller, plus dissipation from any other devices installed in the same enclosure. This is especially important if the controller is mounted inside an enclosure with other heat producing equipment.
- Do not mount the unit:
  - in an area where excessive moisture, corrosive fumes, or explosive vapors are present.
  - where vibration or shock is likely to occur.
  - in a location subject to electrical noise. This includes the proximity of large electrical contractors, electrical machinery, welding equipment, spark igniters, and variable frequency drives.

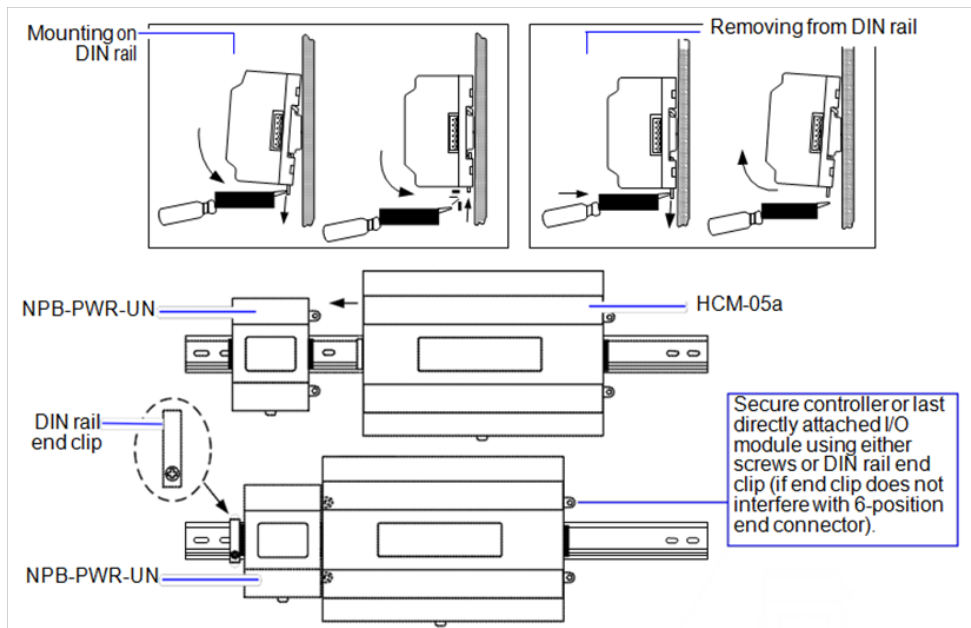
## Physical Mounting

The following information applies about physically mounting the unit.

- You can mount the HCM-05A in any orientation. It is not necessary to remove the cover before mounting.
- Mounting on a 35mm wide DIN rail is recommended. The HCM-05A unit base has a molded DIN rail slot and locking clip, as does the NPB-PWR-UN power supply module and any I/O expansion modules. Mounting on a DIN rail ensures accurate alignment of connectors between all modules.
- If DIN rail mounting is impractical, you can use screws in mounting tabs on the NPB-PWR-UN module and the HCM-05A, as well as any end-connected accessory. See Tab Mounting Dimensions.



Figure 1 and the following procedure provide step-by-step DIN rail mounting instructions for the controller  
 Figure 1: HCM-05A controller and accessory mounting details



Note: Mount the NPB-PWR-UN power supply first, then the controller, then any directly attached I/O expansion module.

### Procedure 1 To mount on DIN rail

- Step 1 Securely install the DIN rail using at least two screws, near both ends of the rail.
- Step 2 Position the NPB-PWR-UN power supply on the rail, tilting to hook DIN rail tabs over one edge of the DIN rail (Figure 1).
- Step 3 Use a screwdriver to pry down the plastic locking clip, and push down and in on the module, to force the locking clip to snap over the other edge of the DIN rail.
- Step 4 Mount the controller onto the DIN rail in the same way, such that its left 6-position end connector faces the NPB-PWR-UN power supply.
- Step 5 Slide the two devices together along the DIN rail to connect their 6-position connectors.
- Step 6 If installing any I/O expansion modules, repeat this for each one, until all are mounted on the DIN rail and firmly connected into one assembly.
- Step 7 To keep the final assembly together, secure at both ends with DIN rail end-clips provided by the DIN rail vendor. This also prevents the assembly from sliding on the DIN rail. See Figure 1.

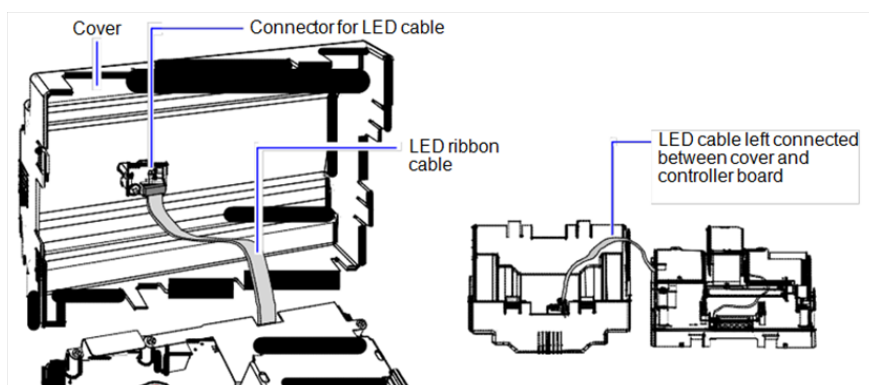
## Removing and Replacing the Cover

You must remove the controller's cover to connect the battery (new unit), and/or to install any option cards, or replace the NiMH battery. The cover snaps onto the base with four plastic tabs (two on each end).

  
**Caution**

An LED ribbon cable connects the cover to the main board. Be careful when lifting the cover off. If the controller is on a flat work surface, you can leave the cable connected, with the cover next to the unit. See Figure 2.

Figure 2 Removing HCM-05A controller cover



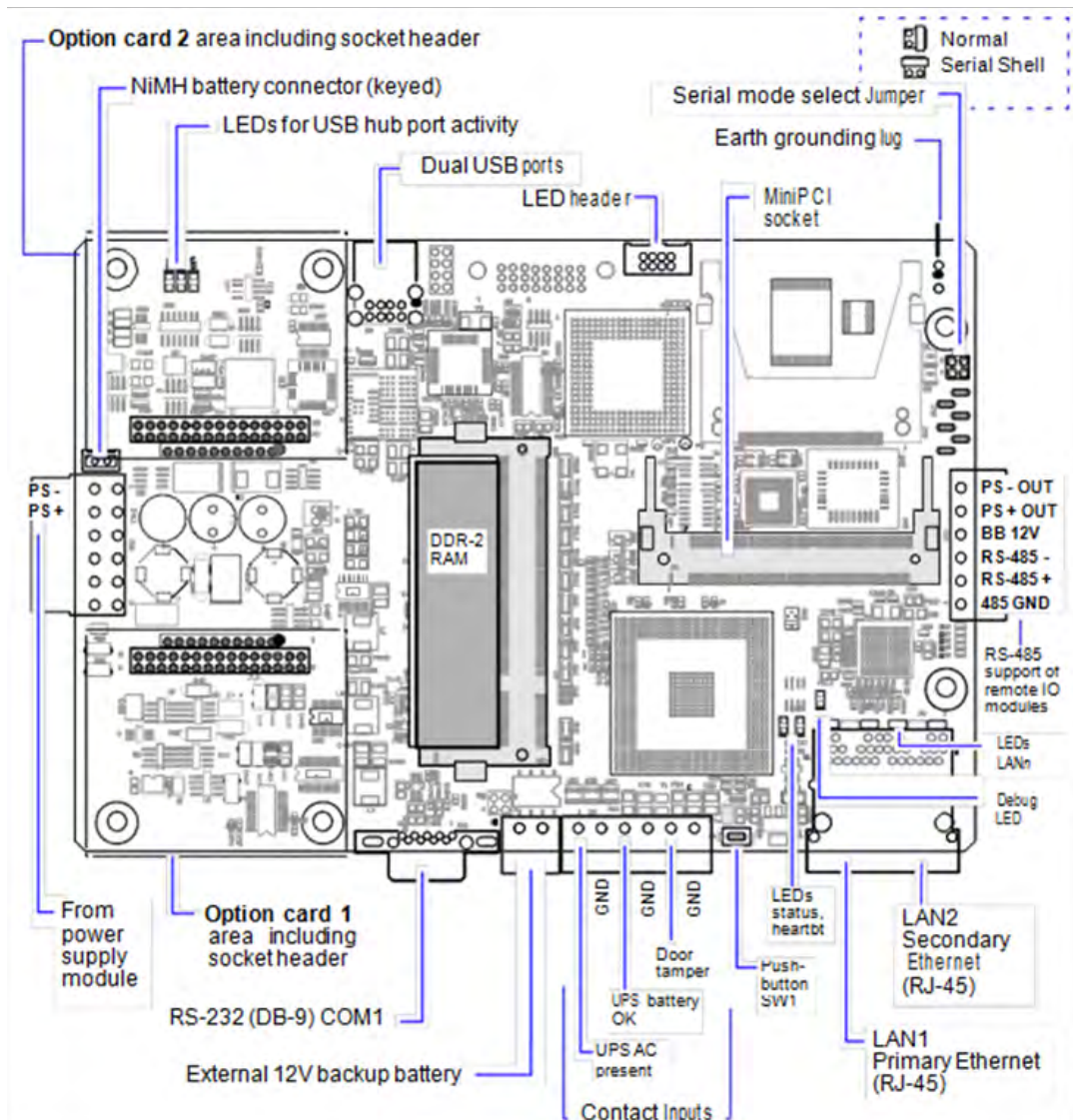
Note: If accessory modules are plugged into the controller, you may need to slide them away from the unit to get to the end cover tabs.

- To remove the cover, press in the tabs on both ends of the unit, and carefully lift it off (see previous Caution). If necessary, unplug the LED cable from the cover, at the connector on the back of the cover (see Figure 2).
- To replace the cover, make sure that the LED cable is connected and not folded outside the base. Orient the cover so the cutout area for comm ports is correct, then push inwards to snap in place.

## Board Layout

Figure 3 shows the location of connectors, option slots, and other features of the main board in the HCM-05A controller. For a side view of communications ports and other features, see Figure 4.

Figure 3 HCM-05A controller main board layout details



## Wiring

See Figure 3 to locate connectors and other components on the HCM-05A controller.

Make connections to the HCM-05A in the following order.

1. Install any option boards (LON, RS-485, RS-232, etc.) in available option slots. For complete details, refer to the specific mounting and wiring guide that shipped with the option board.
2. Connect communications cables. Connect the positive and negative of RS-485 on device to the positive and negative of RS-485 on Haier outdoor unit. See “Communications Wiring” for ports available on the HCM-05A base unit. For ports on any installed option board (485-PWR, LON, RS-485, modem) see the specific mounting and wiring guide for any additional details.
3. Apply power to the unit.

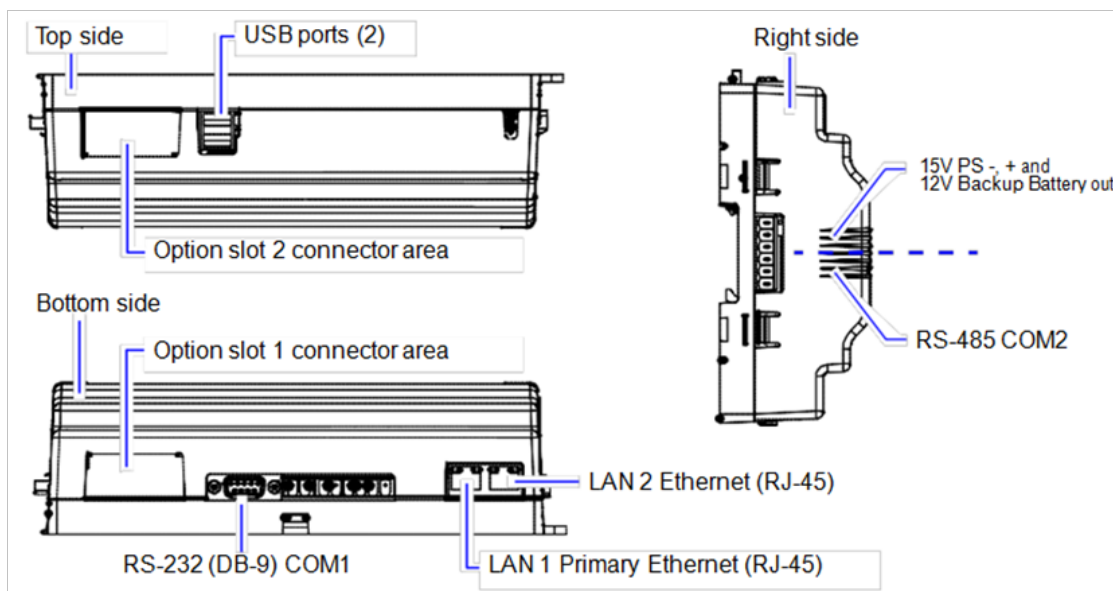
## Communications Wiring

Communications ports on the controller are primarily on the bottom side of the unit, with ports also on the right side and top (Figure 4). Communications port types include:

- Ethernet
- Serial

Note: Prior to connecting cables, provide strain relief for them to prevent damage to the controller.

Figure 4 HCM-05A controller communications ports



### Ethernet

Two, female 1-Gigabit Ethernet connections are provided on the controller. These are RJ-45 connectors labeled LAN2 and LAN1. Use a standard Ethernet patch cable for connecting to a hub or Ethernet switch.

The factory-default IP address for LAN1 is 192.168.1.12n, where the last numeral n in the address matches the last digit in the controller's serial number, and subnet mask is 255.255.255.0. By default, LAN2 is disabled. Go to VRF supervisor system if you need change IP address.

Note: Typically, you only use LAN1 (primary port), unless you have a specific application for the other LAN2 port. For example, isolating a driver's network traffic, using LAN2. Do not use LAN2 as the primary port.

### Serial

There are two "RS" serial ports on the controller's base board. Each has a UART capable of operation up to 115,200 baud. At the bottom of the board (see Figure 4) is an RS-232 port using a DB-9 plug (male) connector. On the right side of the unit is an isolated RS-485 port, using the bottom three terminals of a 6-position screw-terminal connector plug.

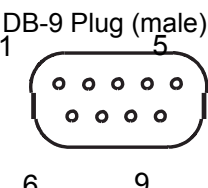
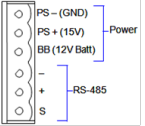
Note: Additional serial ports may be added with option card(s) in Option Slot 1 and Slot 2, such as an NPB-485-PWR card, NPB-232 card, or NPB-2X-485 card (note the last option actually adds two serial ports).

In addition, there are two USB ports—these ports are located on the top side.

## RS-232

An RS-232 serial port using a male DB-9 connector always operates as COM1. You can use standard DB-9 serial cables with this port. The controller is a serial DTE device, such another DTE device (PC, for example) requires a “null modem” cable. If connecting to a DCE device (modem, for example), use a straight-through cable. Table 1 provides standard serial DB-9 pinouts.

Table 1 Serial port (RS-232 and RS-485) pinouts

Base RS-232 DB-9 Port (COM1)			Base RS-485 Port (COM2)	
Pinout References	Signal	DB-9 Plug Pin	Pinouts	
 <p>DB-9 Plug (male)</p>	DCD	Data carrier detect	6-position end connector (male) 	
	RXD	Receive data		1
	TXD	Transmit data		2
	DTR	Data terminal ready		3
	GND	Ground		4
	DSR	Data set ready		5
	RTS	Request to send		6
	CTS	Clear to send		7
		not used on the HCM-05A		8
		9		

## RS-485

An RS-485, optically isolated port is available on 3 pins of the 6-position right-side connector, and always operates as COM2. As shown in Table 1, the screw terminals are minus (–), plus (+), and shield. Wire in a continuous multi drop fashion to other RS-485 devices, meaning “minus to minus”, “plus to plus,” and “shield to shield.” Connect the shield to earth ground at one end only, such as at the HCM-05A.

## USB

Two USB-2.0 ports are standard on the controller. On the HCM-05A, these ports are “stacked” together, located on the top side—see Figure 5.

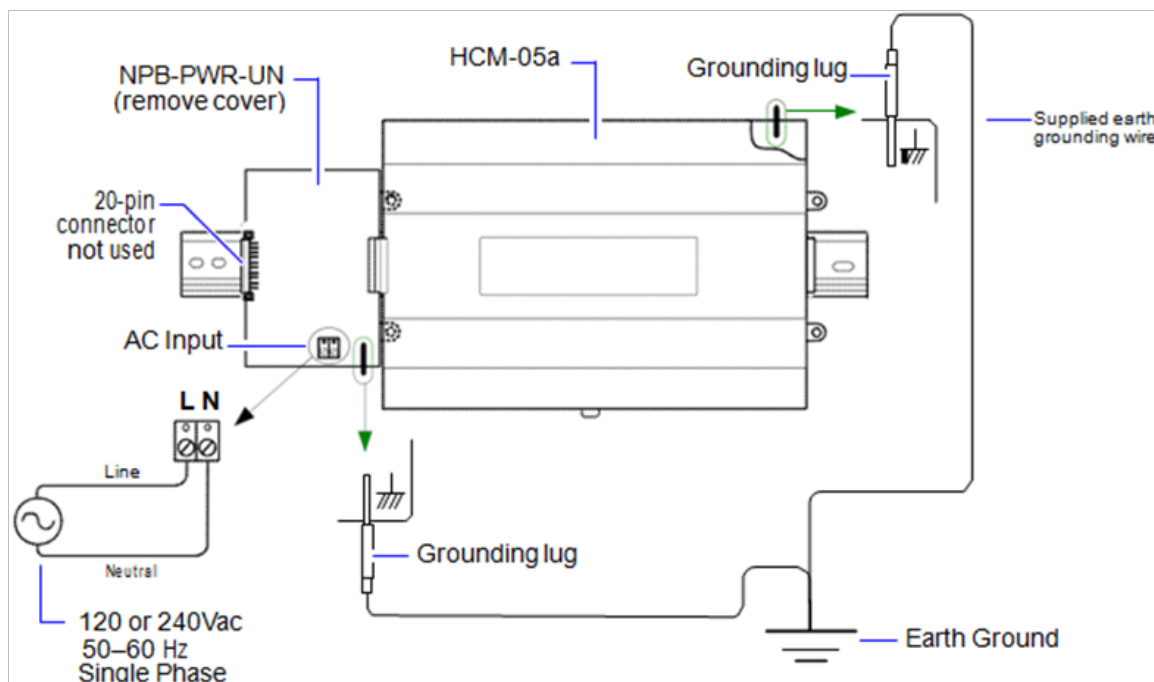
Note: Both USB ports are “low current” ports, capable of supplying up to 100 mA at 5V, maximum.

A typical application for a USB port is to use with a “USB Flash drive” for the transfer of files. The QNX OS running on the controller can automatically recognize an inserted Flash drive as a physical disk.

### Grounding

An earth ground spade lug (0.187") is provided on the controller for connection to earth ground. For maximum protection from electrostatic discharge or other forms of EMI, connect the supplied earth grounding wire to this lug and a nearby earth ground. Keep this wire as short as possible, see Figure 5.

Figure 5 Grounding and power wiring connections to NPB-PWR-UN module



## Power Wiring

There are two power options for the controller: the NPB-PWR-UN power supply module (typical), or a WPM-XXX (Wall Mount AC Adapter).

## NPB-PWR-UN

The NPB-PWR-UN module lets you power the controller (and if installed, connected I/O modules) from AC line power, with a universal input range from 90–263Vac. The NPB-PWR-UN module provides 15V DC ( ) to the controller, and installs on the left side of the controller. See Figure 5.

- A 120Vac or 240Vac circuit powers the NPB-PWR-UN. Disconnect power to this circuit before installation to prevent electrical shock or equipment damage.
- Make all connections in accordance with national and local electrical codes. Use copper conductors only.
- Do not exceed the 30W capacity of NPB-PWR-UN by the powered devices.

## ⚠ Warning

Make power input connections to the terminals on the NPB-PWR-UN circuit board (cover removal is required). Use the supplied earth grounding wires to make a connection from a nearby earth ground to the grounding lug on both the NPB-PWR-UN power supply and the controller. See Figure 5.

### Procedure 3 Wiring NPB-PWR-UN input power and earth ground

Step 1 Remove power from the AC circuit being wired to the NPB-PWR-UN—see previous Warning ..

Step 2 Remove the NPB-PWR-UN cover.

To do this, press in the four tabs on both ends of the unit, and lift the cover off. If the HCM-05A controller is plugged into the unit, you may need to slide it away to get to the cover tabs.

Step 3 Connect the supplied earth grounding wire to a nearby grounding point. See Figure 4.

Step 4 Make AC circuit connections line (mains) and neutral to the terminals labeled “INPUT PWR.”

Step 5 Replace the cover on the NPB-PWR-UN module.

Make sure all modules in the mounted assembly are firmly connected together and secured

#### Caution

Do not energize the AC circuit wired to the NPB-PWR-UN until all other controller mounting and wiring is completed.

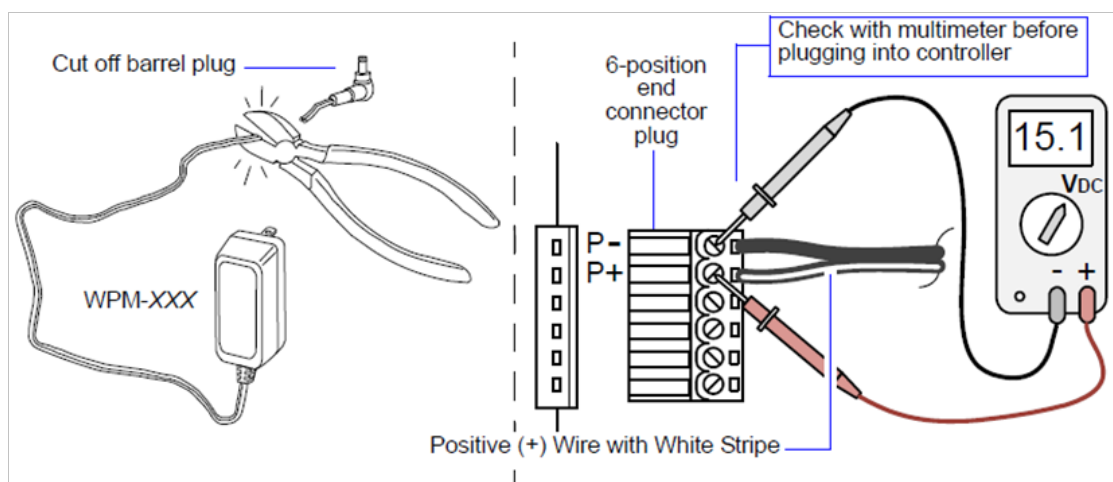
### WPM-XXX (Wall Mount AC Adapter)

You can order and adapt a wall mount AC adapter (model WPM-XXX, where -XXX is -US, -EU, or -UK) to power only the HCM-05A controller. To use the adapter, you must cut off its “barrel plug” end, then wire the two leads into the “P-” and “P+” positions of the 6-position end connector plug, observing proper + and – polarity.

Note:

- I/O modules cannot be powered by that WPM-XXX adapter.
- Before plugging the wired connector plug into the controller, check for 15Vdc at the proper polarity using a multimeter (see Figure 6).

Figure 6 Adapting a WPM-XXX wall mount AC adapter to power the HCM-05A.



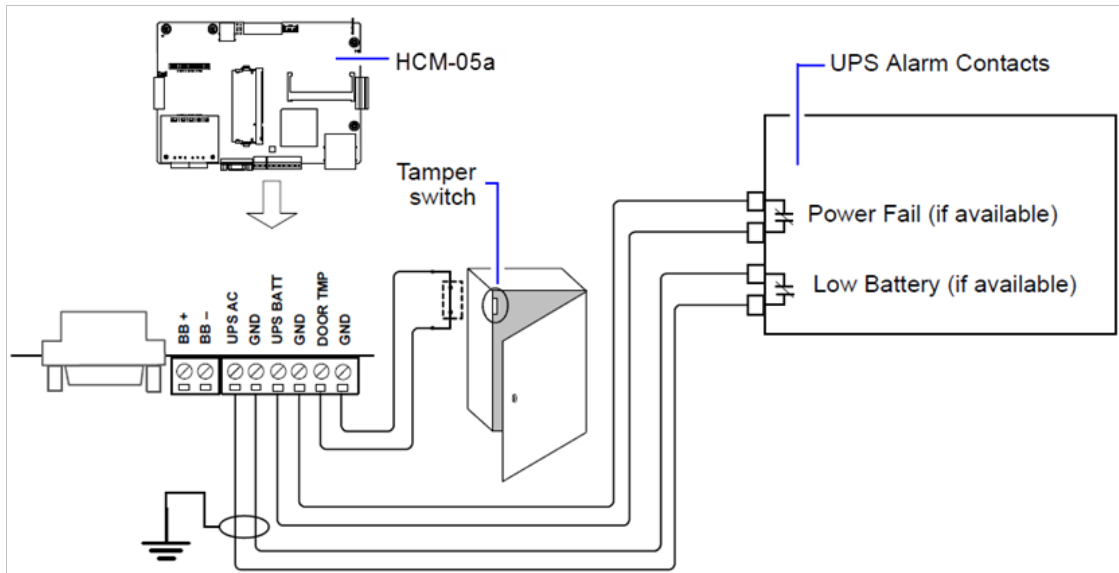
Do not power the controller until all other mounting and wiring is completed.



## Contact Inputs

Three contact inputs (CIs) are on a 6-position connector next to the 2-position external battery connector. CIs typically monitor normally-closed (N.C.) alarm contacts, if available on a UPS and/or the “door tamper” switch of a nearby enclosure. These CIs are unsupervised—no end-of-line resistors are required. Figure 7 shows example wiring to all three CIs of the controller.

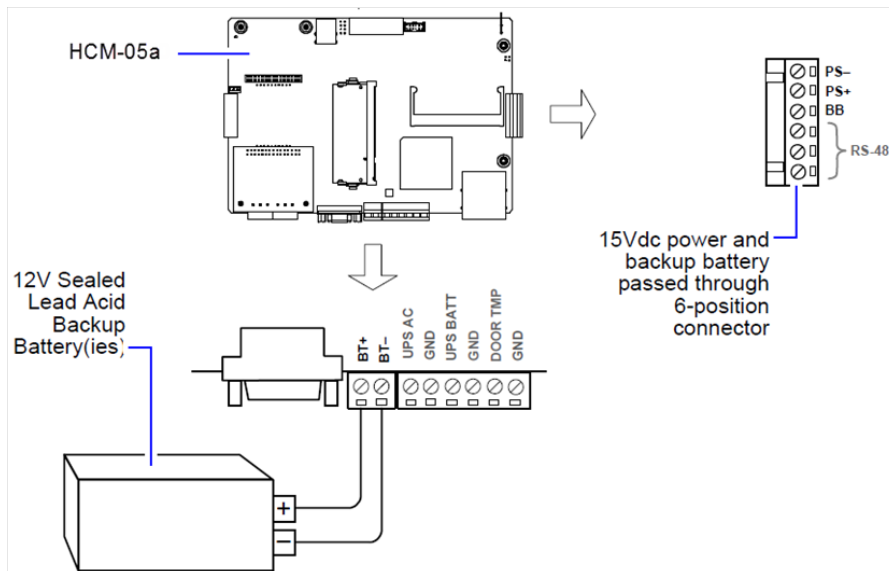
Figure 7 Contact Input wiring to HCM-05A controller



## External 12V Backup Battery

A 2-position connector provides support for an external 12V sealed lead-acid (SLA) type rechargeable battery.

Figure 8 Sealed lead-acid backup battery connection on HCM-05A controller





Note: The minimum wire size for battery connections is 1.0mm<sup>2</sup> for up to 1.22m or 1.29mm<sup>2</sup> for up to 3.66m.  
Using Status LEDs

The HCM-05A provides a number of LEDs on its main board, of which only the Status and Heartbeat LEDs are visible on the cover. Checking other LEDs requires first removing the cover.

LEDs include the following types:

- Status
- Heartbeat
- Debug
- USB
- Ethernet Ports

For the location of LEDs on the main board, see Figure 5.

### **Status**

The green “STATUS” LED is located on the cover. On the main board, it is also the green “SYSOK” LED next to the “HBEAT” LED—both are found near the Ethernet connector housing. The status LED should remain lit whenever the controller is powered, or else be blinking during the boot sequence. If the status LED does not light while power is applied, contact System Engineering for technical support.

### **Heartbeat**

The yellow heartbeat “HBEAT” LED is located on the cover, as well as on the main board next to the “SYSOK” Status LED. The heartbeat LED blinks about once per second. If the heartbeat LED stays on constantly, does not light, or blinks very fast (more than once per second), contact System Engineering for technical support.

### **Debug**

The yellow “DEBUG” LED is located on the main board near the Ethernet connector housing, and remains lit whenever the controller has been rebooted with the “serial mode select” jumper in the “serial shell” position (see Figure 5). This indicates that the DB-9 RS-232 port is operating in serial shell mode.

### **USB**

Three yellow LEDs “LD1”, “LD2”, and “LD3” are located together on the upper left area on the main board, in the option slot 2 area. These LEDs indicate USB hub and port (1 and 2) activity, respectively. These LEDs will not be easily visible if an option card is installed in the upper (Slot 2) option slot.

### **Ethernet Ports**

Two LEDs for each of the two LAN ports are provided on the back of the metal LAN connector housing, and operate as follows.

The left-side green “activity” LED indicates activity on that port as follows:

- Off — No Ethernet link is made
- On — Ethernet link is present, but no activity on the LAN
- Blinking — Ethernet link is present with data activity on the LAN.

The right-side yellow “speed” LED indicates Ethernet connection speed, as either:

- Off — “Fast Ethernet” / “Ethernet” (100 Mbps /10Mbps).
- On — “Gigabit Ethernet” speed (1000 Mbps).

## Tab Mounting Dimensions

Measurements are in inches and (mm). DIN mounting is recommended over tab mounting. See Figure 9.

Note: Electronic and printed versions of this guide may not show the dimensions to scale. Verify all measurements before drilling.

Figure 9 HCM-05A controller tab mounting dimensions

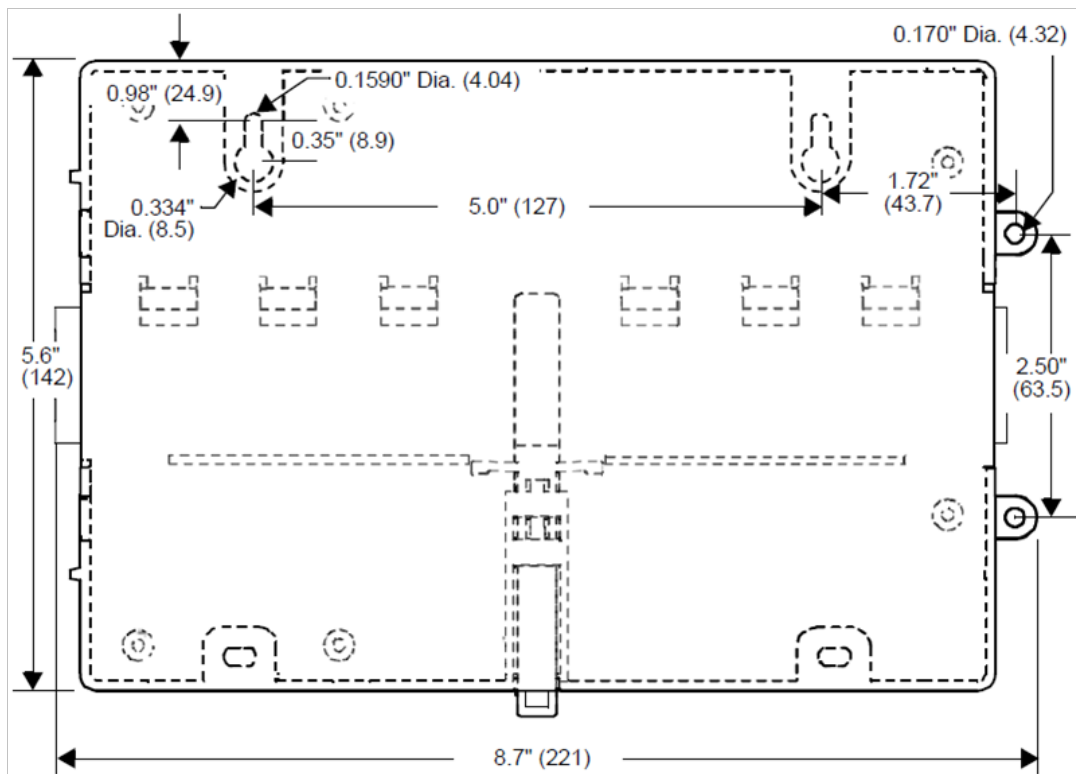
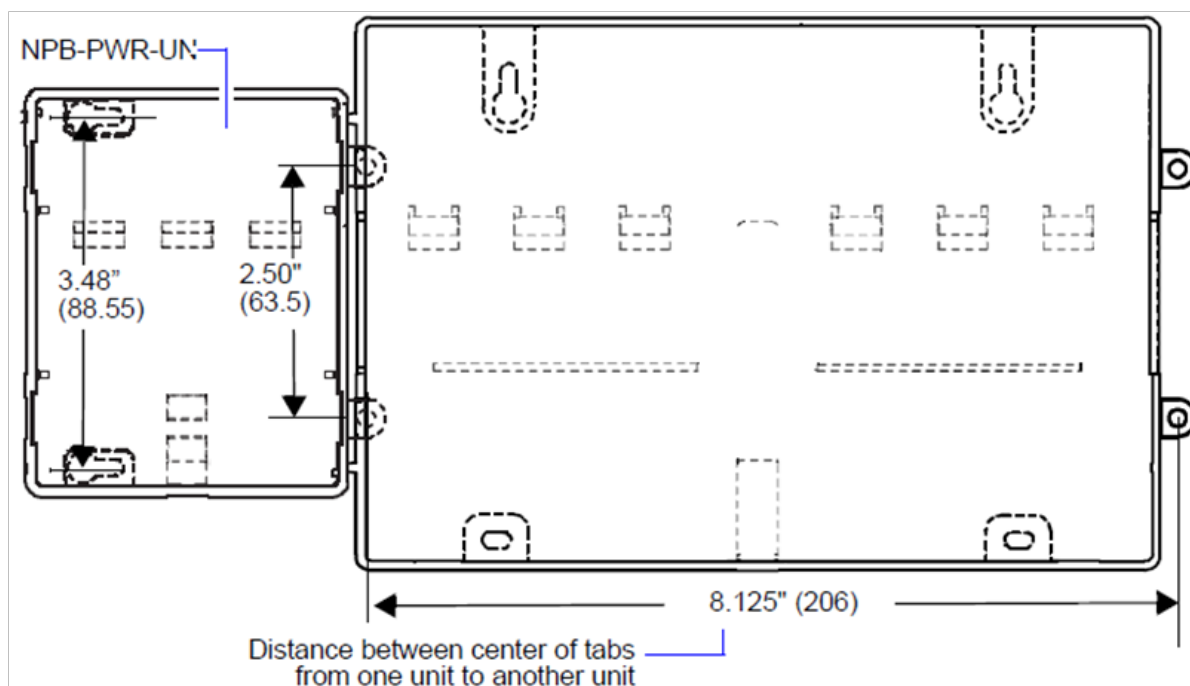


Figure 10 HCM-05A controller with power supply module attached



## System Configuration

### Set IP Address

After completing the mounting and wiring, please perform the following steps to set the system IP address in order to establish the connection between the computer and the device:

1. Set the network segment of computer the same as the network segment of IP address that comes with the hardware or document.
2. Make sure using an Ethernet cable connect to the LAN1 port directly (IP address is set on LAN1 by default), so that you can access VRF supervisor system.
3. Open a Google Chrome window.
4. Input the IP address that comes with the hardware or document in the opened Chrome window, type the default user name haier and initial password vrf, and click "Login" (To check the device's factory-default IP address, please refer to Ethernet).
5. It's suggested that you change the initial password right away in "System Configuration" > "User Management" during first login.
6. Next, go to "System Configuration" > "System Parameters" > "Initialization" to set the IP address of the LAN2 (The settings of LAN2 IP address vary on if the device is to connect to the BACnet network or not, please refer to Connection Setting for configuration).
7. Reboot the system after finishing all of the above steps.

## Building Configuration

You need configure buildings/floors/locations first after logging into the VRF supervisor system.

Firstly, add buildings by performing the following steps:

1. Click “System Configuration”.
2. Click “Building Configuration” to open the Building Configuration page.
3. Click “Add Building” button.
4. Type a name which consists of letters or numbers in “Building Name” field.
5. Input a number in “Building Area” field.
6. Type a description for the building in “Description” field.
7. Click “Save” button.

The screenshot displays the Haier VRF supervisor system's 'Building Configuration' interface. The top navigation bar includes 'Indoor Unit Management', 'Electricity Management', and 'System Configuration'. The 'System Configuration' section is active, showing 'Building Configuration', 'Device Configuration', 'User Management', and 'System Parameters'. The 'Building Configuration' page is divided into two main sections: 'Facility List' on the left and 'Add Building' on the right. The 'Facility List' shows a tree view with 'haier' and '暖通大厦'. The 'Add Building' form contains three input fields: 'Building Name' (with the value 'New Building'), 'Building Area', and 'Description'. Below the form are 'Cancel' and 'Save' buttons. The bottom status bar indicates 'Task: 0/0 | Progress: 0/0 Completed | No progress information'.

Secondly, perform following steps to add floors:

1. In the Facility List, select the building you want to add a floor.
2. In the right side of the Building Property page, click the “Add Floor” button.
3. Type a name in the “Floor Name” field.
4. “Belong to” field will by default show the full locality path that the new floor will be added to.
5. Input a number in “Floor Area” field.
6. Type a description for the floor in “Description” field.
7. Click “Save” button.

The screenshot displays the Haier Building Configuration web interface. The top navigation bar includes the Haier logo, menu items for IndoorUnit Management, Electricity Management, and System Configuration, and user information (haierAdmin, English, Logout). The main content area is titled 'Add Floor:' and contains the following form fields:

- Floor Name:
- Belong to: #FacilityTreehaier
- Floor Area:
- Description:

At the bottom of the form are 'Cancel' and 'Save' buttons. The footer of the page shows 'Powered by Niagara Technology' and a progress indicator: 'Task: 0/0 | Progress: 0/0 Completed | No progress information'.

Finally, perform following steps to add locations:

1. In the Facility List, select the floor you want to add a location.
2. In the right side of the Building Property page, click the “Add Location” button.
3. Select the desired type from the “Location Type” drop-down list.
4. Type a name for the new location in the “Zone Name” / “Room Name” field.
5. “Belongs to” field will by default show the full locality path that the new location will be added to.
6. Input a number in “Zone Area” / “Room Area” field.
7. Type a description for the new position in “Description” field.
8. Click “Save” button.

The screenshot displays the Haier Building Configuration web interface. The top navigation bar includes 'IndoorUnit Management', 'Electricity Management', and 'System Configuration'. The main content area is divided into two panels: 'Facility List' on the left and 'Add Location' on the right. The 'Facility List' panel shows a tree structure with 'haier' at the root, followed by 'NewFloor1', 'NewFloor2', and 'NewFloor3'. The 'Add Location' panel contains the following fields:

- Location Type: A dropdown menu with 'Zone' selected.
- Zone Name: A text input field containing 'New Zone or Room'.
- Belong to: A text input field containing '/FacilityTree/haier/NewFloor1'.
- Zone Area: A text input field containing '0'.
- Description: A large text area for entering a description.

At the bottom of the 'Add Location' panel, there are 'Cancel' and 'Save' buttons. The footer of the interface shows 'Powered by Niagara Technology', 'Task: 0/0', 'Progress: 0/0', and 'Completed | No progress information'.

## Device Configuration

After configuring the facilities, you need to configure the devices. In VRF supervisor system, a device mainly consists of outdoor units, indoor units, pulse electric meter and gateway.

You may configure a group and its indoor units in “Device Configuration” under “System Configuration”.

A group may include 1 outdoor unit (Currently, only one outdoor unit is supported in one group), 1 electric meter (which is connected to outdoor unit, and is used for measuring the consumption of outdoor unit) and 1 gateway.

You need to configure group first, and then configure indoor units.

The Device Configuration page is shown below:

The screenshot displays the 'Device Configuration' interface. On the left, a 'Group List' shows two groups: 'GATEWAY 1 (2)' and 'GATEWAY 2 (0)'. The main configuration area is titled 'Add Group' and includes the following settings:

- Group ID: GATEWAY 1
- BUS Port: COM2
- Outdoor Addr: 0
- Gateway Addr: 0
- Inst. Position: 101
- Pulse Number: 10
- Pulse Multiple: 1

Below the settings is an 'Indoor Unit List' table:

Indoor Unit ID	Gateway Name	Central Addr	Group Addr	Indoor Unit Mode	Installation Position	User
no.1	GATEWAY 1	0	1	Wall mounted - AS	office building/first	manager
no.2	GATEWAY 1	1	2	Low static pressure duct - AD	office building/second	doctor

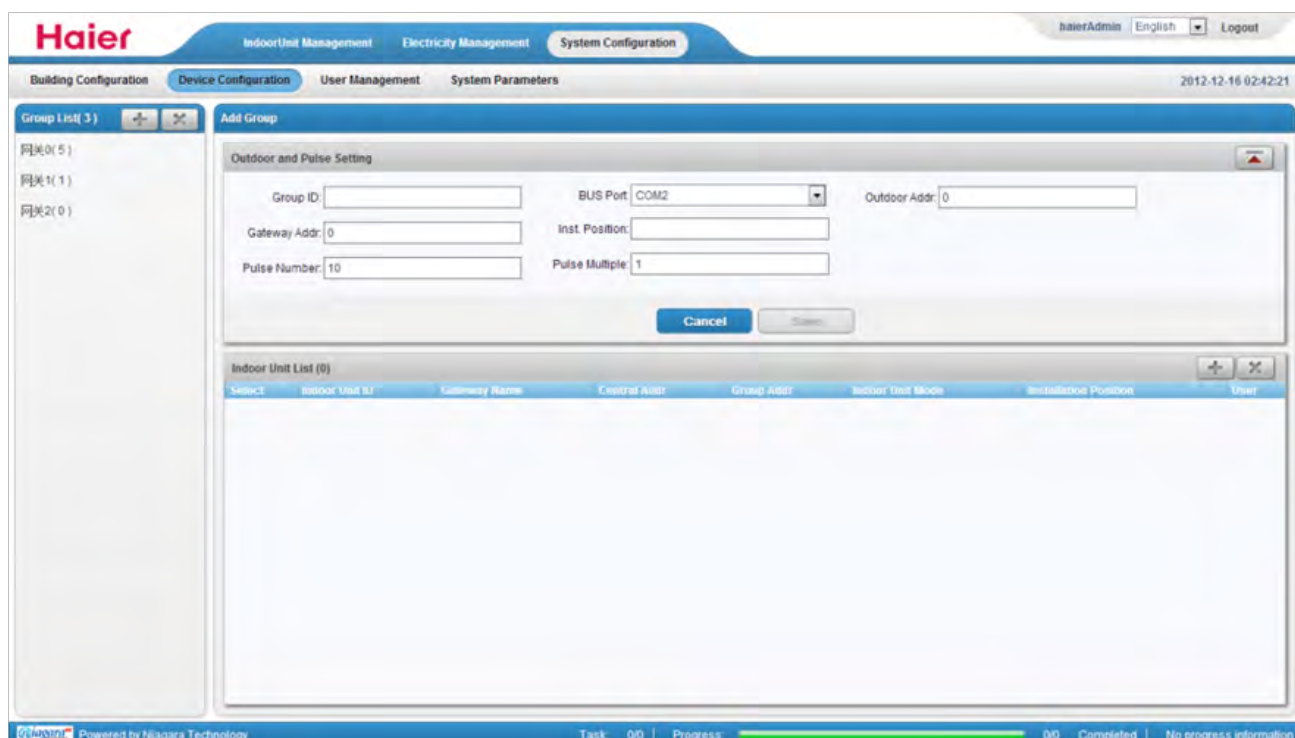
## Configure Groups

In this system, a group has below properties:

Property	Description
Group ID	An ID which is used to identify the group
Bus Port	The BUS port where the gateway is connected to the system, default is COM2
Gateway Addr	DIP address of IGU02 gateway, which ranges from 0 to 31
Outdoor Addr	Address of outdoor unit, which defaults is 0
Inst. Position	The position where the outdoor unit is installed
Pulse Number	Pulse number of electric meter
Pulse Multiple	Pulse multiple of electric meter

### Perform following steps to add a group:

1. Click + sign in Group List.
2. In “Outdoor and Pulse Setting” section under “Add Group” page, type a group name in “Group ID” field.
3. Select a bus port to use from the “BUS Port” dropdown list.
4. Input an outdoor address in “Outdoor Addr”, default is 0.
5. Input a gateway address in “Gateway Addr”.
6. Type the install position of the outdoor unit in “Inst. Position” field.
7. Input a multiple of 10 in “Pulse Number” field.
8. Input a number in “Pulse Multiple” field.
9. Click “Save” button.





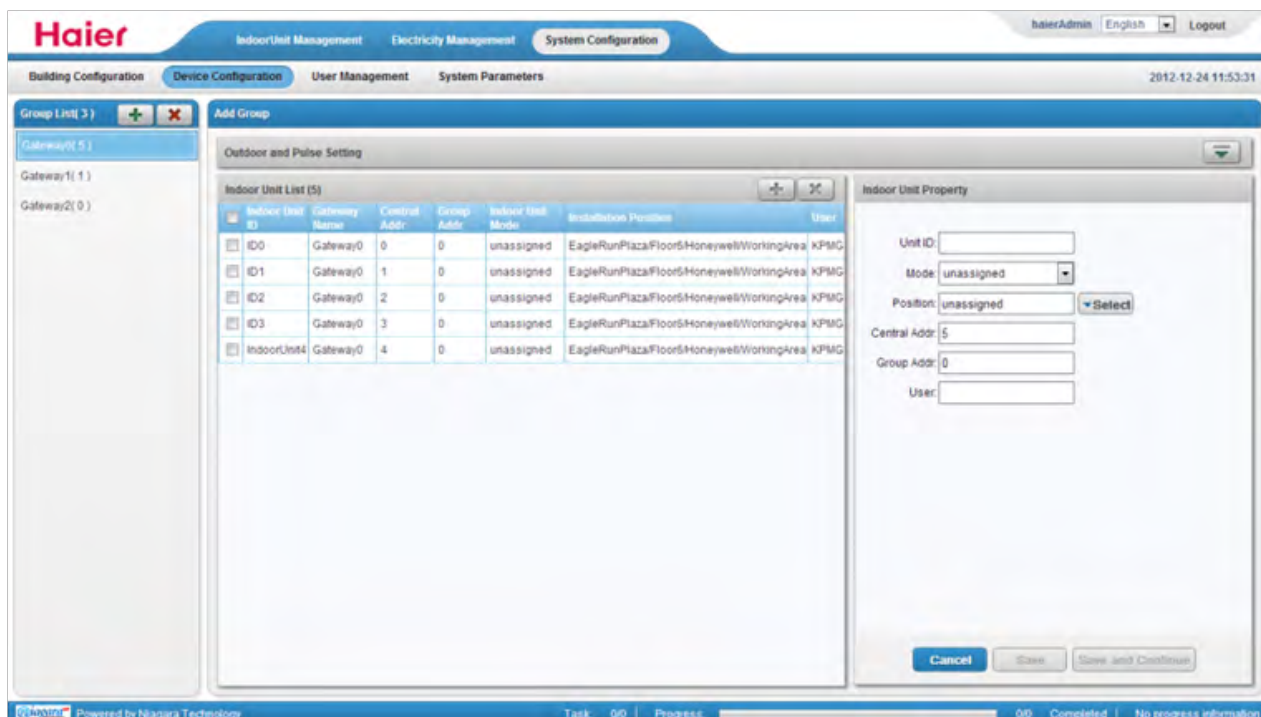
## Configuring Indoor Units

A group may have 40 indoor units at most. One HCM-05 supports up to 250 indoor units. In this system, an indoor unit has the following properties:

Property	Description
Unit ID	Indoor unit ID
Mode	Options are “Wall mounted – AS”, “Low static pressure duct – AD”, “Floor and ceiling – AC” and “Cassette – AB”.
Group Addr	This address is managed by the central controller, default is 0; if it is set to a number between 1 and 15, a pop up telling you cannot control but can monitor the indoor unit will appear, then you can only control indoor unit through the remote controller.
Central Addr	DIP address of indoor units, which is used to communicate with the gateway, central address ranges from 0 to 63.
Position	The position where the indoor unit is installed or the locality that indoor unit belongs to.
User	The end user of the indoor unit

### Perform following steps to add indoor units:

1. Click + sign in “Indoor Unit List”. Indoor Unit Property panel is opened on the right side.
2. Input an indoor unit name in “Unit ID” field.
3. Select an indoor unit model from “Mode” drop-down list.
4. Select the position where the indoor unit is installed from “Select” list of Position
5. "Central Addr" will be assigned a number by system; you can modify this number to another number between 0-63 which has not been used in system.
6. Input a group address in “Group Addr” field, default is 0.If it's set to a number other than 0, you cannot control but can only monitor the indoor unit, and you have to control indoor unit through the remote controller of the air conditioner.
7. Type the name of indoor unit user in “User” field.
8. Click “Save” button to simply save the indoor unit or “Save and Continue” to add another indoor unit.



## Configuring Users

You need to configure users after configuring buildings and devices. There're three kinds of users in this system: system administrator, super building manager and building manager.

The following table lists these 3 user roles and their permissions to the system for reference:

1st level Menu	2nd Level Menu	3rd Level Menu	Description	Building Manager	Super Building Manager	System Administrator
<b>Indoor Unit Monitoring</b>						
Indoor unit Management	Monitor		Monitor the status of indoor unit	√	√	√
Indoor unit Management	Monitor		Monitor the room temperature	√	√	√
Indoor unit Management	Monitor		Monitor the working conditions of indoor unit	√	√	√
Indoor unit Management	Monitor		Check the payment of electricity fee	√	√	√
Indoor unit Management	Monitor		Set indoor unit(s)	√	√	√
Indoor unit Management	Monitor		Check and apply the schedule	√	√	√
Indoor unit Management	Alarm		Handling the indoor unit fault and alarm	√	√	√
<b>Schedule Management</b>						
Indoor unit Management	Schedule		View a schedule	√	√	√
Indoor unit Management	Schedule		Create/manage weekly and exception schedule		√	√
Indoor unit Management	Schedule		Assign a schedule		√	√
<b>Electricity Management</b>						
Electricity Management	Electricity Bill		View the electricity fee within the specified date range	√	√	√
Electricity Management	Electricity charge		Electricity recharge		√	√
<b>Building Configuration</b>						
System configuration	Building configuration		Configure building/floor/location			√
<b>Device Configuration</b>						
System configuration	Device configuration		Add/Edit a group			√
System configuration	Device configuration		Add/Edit an indoor unit			√
<b>User Management</b>						
System configuration	User management		Modify/Add/Delete user		√	√

System configuration	User management		Indoor unit assignment		√	√
System Parameters						
System configuration	System Parameters	Initialization	Initialization			√
System configuration	System Parameters	Electricity Setting	Set the parameters for electricity price			√
System configuration	System Parameters	System/Device Synchronize	System and device synchronization setting			√
System configuration	System Parameters	History Setting	History Setting			√
System configuration	System Parameters	BACnet Configuration	BACnet Configuration			√
System configuration	System Parameters	Facility/Device import/export	Import/export facility/device configurations			√
System configuration	System Parameters	History export	Export history			√
System configuration	System Parameters	Log Setup	Set the system log			√
System configuration	System Parameters	Alarm Setting	Alarm setting			√

**System Administrator** is a user come with the system, you cannot edit the account name and type of the system administrator, but you can modify the first name, last name, telephone and password, as shown below:

The screenshot displays the Haier System Configuration web interface. The top navigation bar includes 'Indoor Unit Management', 'Electricity Management', and 'System Configuration'. The 'System Configuration' section is active, with sub-menus for 'Building Configuration', 'Device Configuration', 'User Management', and 'System Parameters'. The 'User Management' sub-menu is selected, showing a 'User List' table and a 'Profile' editing form.

**User List Table:**

	Account Name	First Name	Last Name	Phone Number	User Type
<input type="checkbox"/>	haierAdmin				SystemAdmin

**Profile Form:**

- Account: haierAdmin
- First Name:
- Last Name:
- Phone Number:
- Type: SystemAdmin
- Password:
- Password Confirm:

Buttons: Cancel, Save

Footer: Powered by Niagara Technology | Task: 0/0 | Progress: 0/0 Completed | No progress information

System Administrator may add super building manager and building manager, and may also assign indoor units to building manager.

Perform the following steps to add a super building manager:

1. Click “System Configuration” > “User Management”.
2. Click “New” button at the upper right corner of user list.  
“Profile” panel will be opened on the right side.
3. Type the new account name in “Account” field.
4. Type the first name of the new account in “First Name” field.
5. Type the last name of the new account in “Last Name” field.
6. Input the telephone number of the new account in “Telephone” field.
7. Select “Super Building Manager” from the “Type” drop-down list.
8. Input the password for the new account in “Password” field.
9. Input the password for the new account once again in “Password Confirm” field.
10. Click “Save” button to save the new account or “Cancel” button to cancel adding a new account.

The screenshot displays the Haier User Management interface. At the top, there are navigation tabs for 'IndoorUnit Management', 'Electricity Management', and 'System Configuration'. The 'System Configuration' tab is active, and within it, 'User Management' is selected. The main area is divided into two panels: 'User List' on the left and 'Profile' on the right.

The 'User List' panel contains a table with the following data:

	Account Name	First Name	Last Name	Phone Number	User Type
<input type="checkbox"/>	haierAdmin				SystemAdmin
<input type="checkbox"/>	EagleRunSuperAdmin	Kathy	Roy	010 11111111	SuperBuildingManager

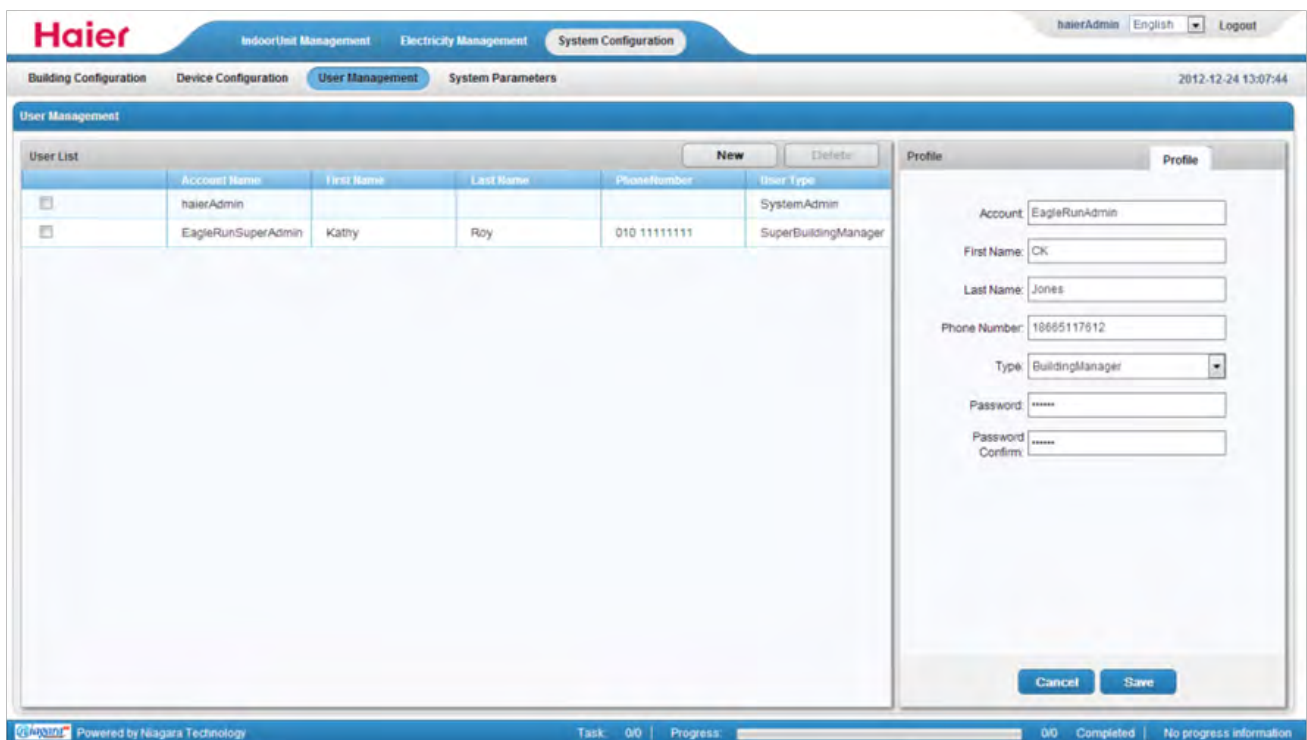
The 'Profile' panel shows a form for adding a new user with the following fields:

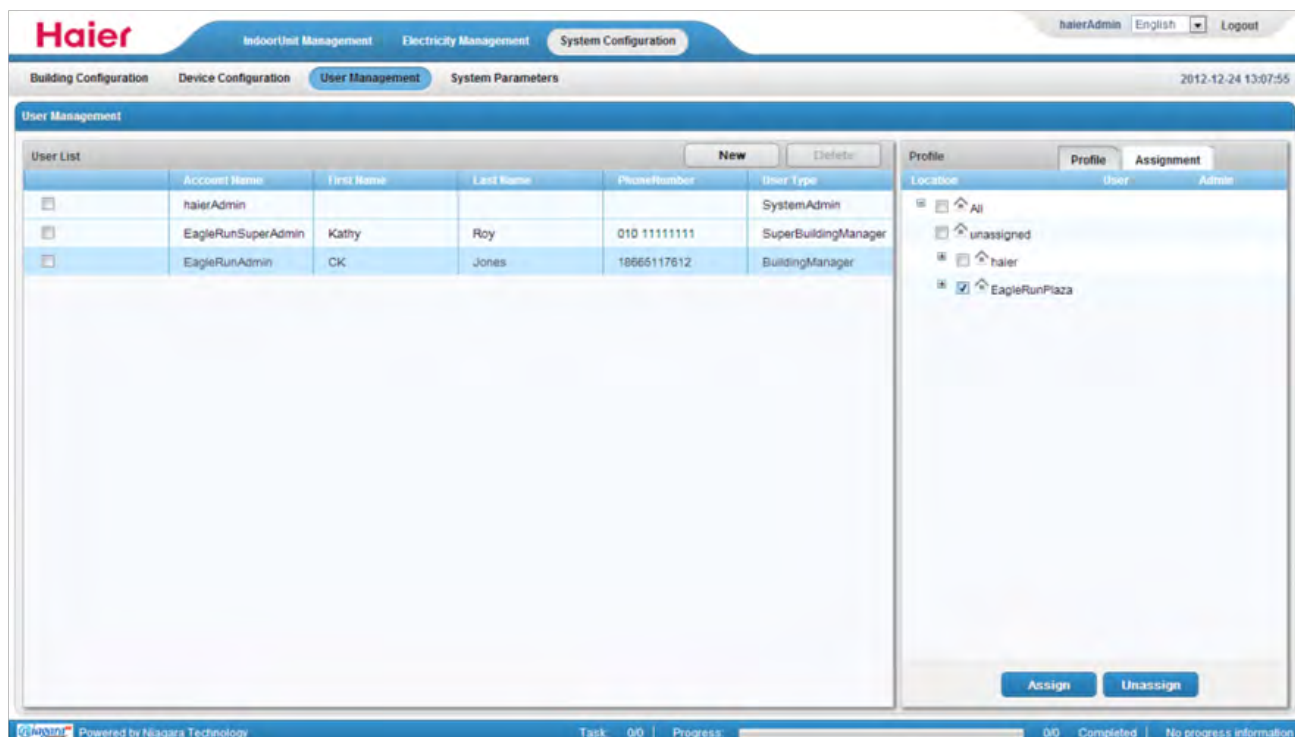
- Account: EagleRunSuperAdmin
- First Name: Kathy
- Last Name: Roy
- Phone Number: 010 11111111
- Type: SuperBuildingManager (selected from a dropdown)
- Password: \*\*\*\*\*
- Password Confirm: \*\*\*\*\*

Buttons for 'New' and 'Delete' are located above the user list, and 'Cancel' and 'Save' buttons are at the bottom of the profile form. The footer of the interface includes the Niagara Technology logo, task and progress indicators, and a 'Completed' status.

Perform the following steps to add a building manager and assign indoor units to that building manager:

1. Click “System Configuration” > “User Management”.
2. Click “New” button at the upper right corner of user list.  
“Profile” panel will be opened on the right side.
3. Type the new account name in “Account” field.
4. Type the first name of the new account in “First Name” field.
5. Type the last name of the new account in “Last Name” field.
6. Input the telephone number of the new account in “Telephone” field.
7. Select “Building Manager” from the “Type” drop-down list.
8. Input the password for the new account in “Password” field.
9. Input the password for the new account once again in “Password Confirm” field.
10. Click “Save” button to save the new account.
11. Select the indoor units to assign to this building manager in the “Assignment” tab opened on save.
12. Click “Assign” button to save indoor units assigned to the building manager or click “Unassign” button to cancel the assignment.





Super building manager can also add super building manager and building manager, and assign indoor units to building manager, the steps are the same as above.

Building manager has no permission to add a user, but only can monitor and view the indoor units assigned to him/her in “Monitoring” and “Alarm” under “Indoor Unit Management”.

To delete a user, please:

1. Click “System Configuration” > “User Management”.
2. Select the account name to delete by selecting its checkbox.
3. Click “Delete” button on the upper right corner of user list.

To modify a user, please:

1. Click “System Configuration” > “User Management”.
2. Select the account name to modify by selecting its checkbox.
3. Make modifications in the user information opened.
4. Click “Save” button.



## Configuring System Parameters

Next, you need to configure the system parameters which include “Initialization”, “Electricity Setting”, “System/Device Synchronize”, “History Setting”, “BACnet Configuration”, “Facility/Device Import/Export”, “Log Setup” and “Alarm Setting” sections.

### Initialization

Initialization section provides time synchronization and connection setting features.

You may go to this page by clicking “System Configuration” > “System Parameters” > “Initialization”.

### Time Synchronization

When the system is online first time, you should synchronize the computer time and device time.

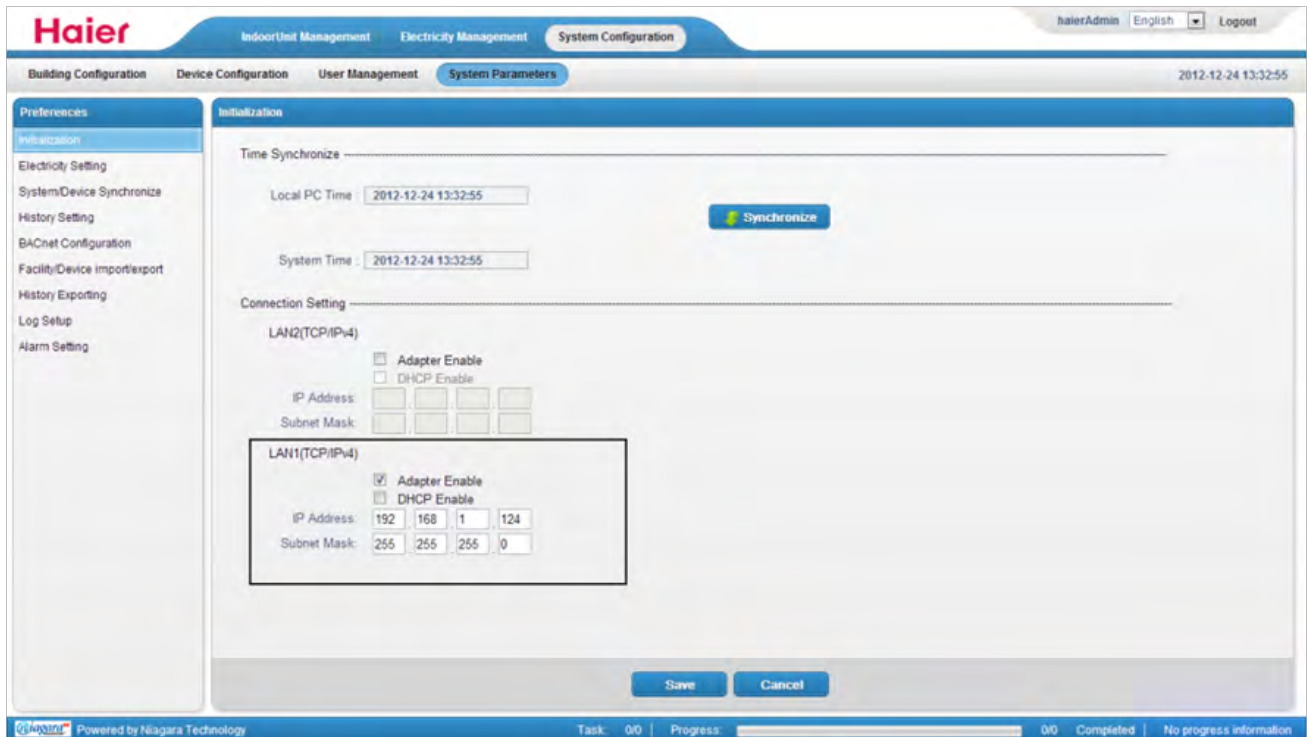
Perform the following steps to synchronize the time:

1. Click “System Configuration” > “System Parameters” > “Initialization”.
2. Click “Synchronize” button.

## Connection Setting

VRF system provides 2 LAN ports, LAN1 and LAN2. The factory-default IP address for device on first access is set on LAN1.

It's suggested to always assign fixed IP address to LAN1.



Note:

1. Enable DHCP only after one LAN is set a fixed IP address, or the system will not find the IP address obtained automatically;
2. The specified IP address effects only after HCM-05 controller is rebooted automatically;
3. Two LAN ports are better not set to the same network segment, because LAN2 is generally used for BACnet communication network;

If the device connects to the LAN only but will not connect to a BACnet network, then you need to use an Ethernet cable to connect directly from the computer to the device, and in "Initialization" section:

A. Set fixed IP address:

1. Keep all settings of LAN1 as is.
2. Select "Adapter Enable" checkbox in LAN2 section.
3. Input a fixed IP address and subnet mask in LAN2. The IP address of LAN2 should be set to a different network segment from the one that LAN1 is set to.
4. Click "Save" button.
5. Reboot the system.

B. Obtain the IP address automatically:

1. Keep all settings of LAN1 as is.



2. Select “Adapter Enable” checkbox in LAN2 section.
3. Select “DHCP Enable” checkbox in LAN2 section.
4. Click “Save” button.
5. Reboot the system.

Note: Only LAN2 needs to be connected when using the system after configuration, LAN1 should be idle and does not connect any cable.

If the device connects both to the LAN and to a BACnet network, you need to use one Ethernet cable to connect directly from the computer to the device’s LAN1 port, and also use another Ethernet cable to connect from the device’s LAN2 port to the BACnet network, and then in “Initialization” section:

A. Set fixed IP address:

1. Input a fixed LAN IP address and subnet mask in LAN1.
2. Select “Adapter Enable” in LAN2.
3. Input a fixed BACnet IP address and subnet mask in LAN2.
4. Click “Save” button.
5. Reboot the system.

B. Obtain IP address automatically:

1. Input a fixed LAN IP address and subnet mask in LAN1.
2. Select “Adapter Enable” checkbox in LAN2.
3. Select “DHCP Enable” checkbox in LAN2.
4. Click “Save” button.
5. Reboot the system.

Note: LAN1 and LAN2 should be connected all the time when using the system after configuration.

## Electricity Setting

You need to configure the bill currency, bill mode, alarm limit and bill price in “Electricity Setting” section.

Perform the following steps to set postpaid electricity bill:

1. Type the currency of electricity bill to use in “Bill Currency” field.
2. Set the start time of peak price, and input the peak price.
3. Set the start time of valley price, and input the valley price.
4. Set the start time of normal price, and input the normal price.
5. Click “Save” button.

Perform the following steps to set recharge mode of electricity:

1. Type the currency of electricity bill in “Bill Currency” field.
2. Check the “Recharge Mode” box in Bill Mode.
3. Input a limit in “Alarm Limit” field. Once the electricity fee is lower than the specified limit, the system will warn the user to recharge for indoor units.
4. Select “Recharged by users” or “Recharged by Indoor Units”.
5. Set the start time of peak price, and input the peak price.
6. Set the start time of valley price, and input the valley price.
7. Set the start time of normal price, and input the normal price.
8. Click “Save” button.

If the generated electricity bill mismatches the readings of electric meter apparently, please check the history records first, if electricity records for someday is missing, you may restore the electricity data to find the lost data.

To restore the data of electricity fee, please:

1. Select “Restore Missing Data Only” or “Force Restore All Data”.
2. Select the start date and end date.
3. Click “Restore” button.

## System/Device Synchronize

“System/Device Synchronize” section is used for synchronizing the gateway time, pulse number and peak / valley /normal time between VRF system and device, in which lists the “Group ID” created, “Port” used by groups, configured gateway “Address” and its “Connection Status” with device.

Note: The system can calculate consumption and electricity fee correctly only when the system is synchronized with device.

To write the group’s pulse number, gateway time and peak/valley/normal time to device, please make sure that all groups are “Connected”, and then press the “Synchronize” button.

The screenshot shows the Haier System Configuration interface. The main content area is titled "System/Device Synchronize" and contains the following text: "This configuration will synchronize gateway time, pulse number, peak/normal/valley time between VRF system and device gateway , please refer to connect status to implement the synchronization". Below this text is a table with the following data:

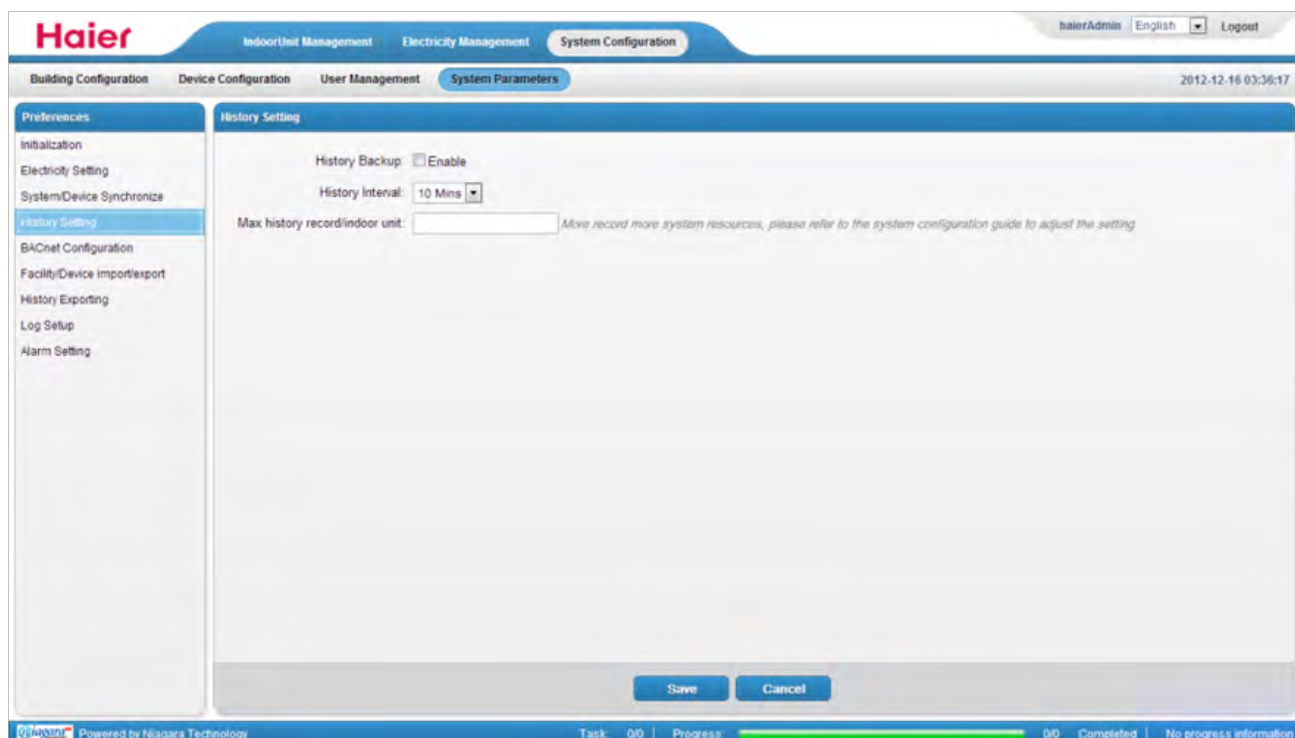
Group ID	Port	Address	Connection Status
Gateway0	COM2	0	Connected
Gateway1	COM2	1	Disconnected
Gateway2	COM2	2	Disconnected

At the bottom of the main content area, there is a "Synchronize" button. The interface also includes a navigation menu on the left with options like "Preferences", "Initialization", "Electricity Setting", "System/Device Synchronize", "History Setting", "BACnet Configuration", "Facility/Device import/export", "History Exporting", "Log Setup", and "Alarm Setting". The top navigation bar includes "Indoor/Unit Management", "Electricity Management", and "System Configuration". The bottom status bar shows "Task: 0/0 | Progress: 0/0 Completed | No progress information".

## History Setting

When you need to keep the system history, you may enable “History Backup” feature in “History Setting”, and then set the “History Interval” for backup and the maximum records keep for each indoor unit. Exported history contains health history and electricity fee history of indoor units.

Note: that the system will only keep the specified maximum records for history, hence, when the number of records exceeds this limit, the old history will be overwritten. Please export any required history records timely to store them in your computer.

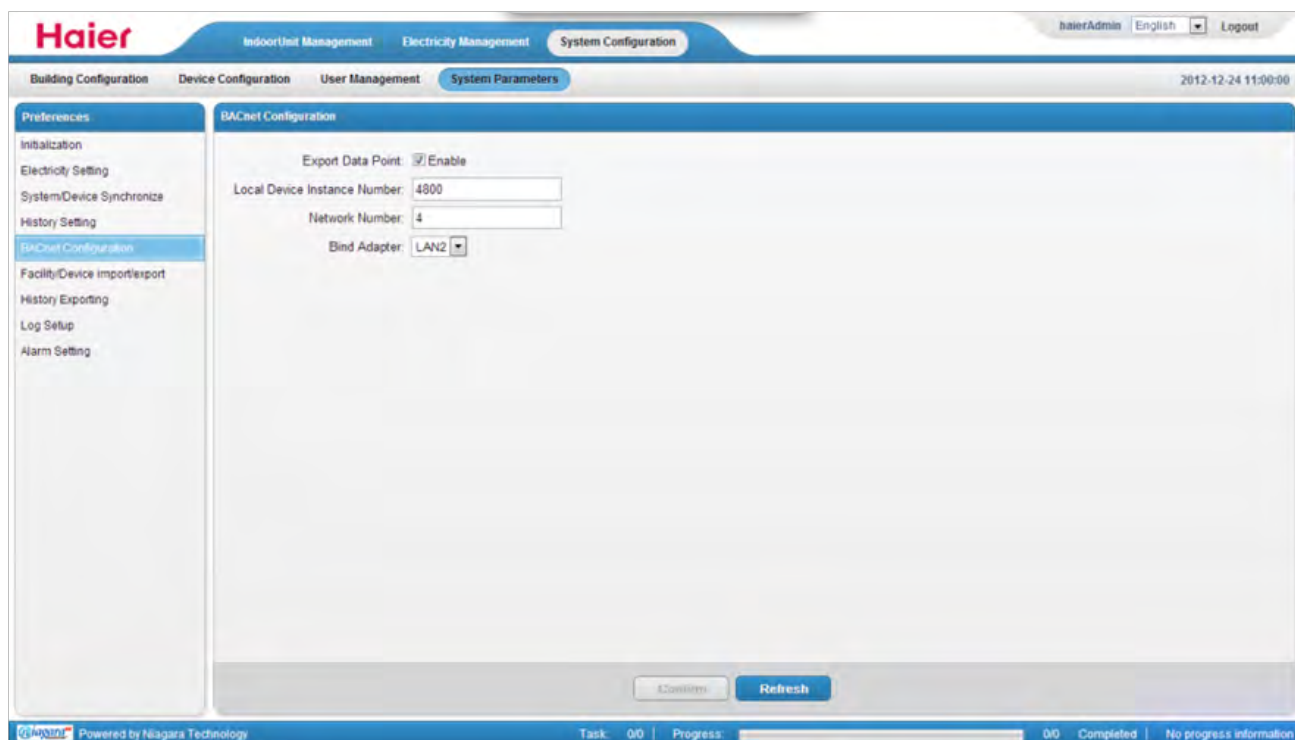


Perform the following steps to enable history backup and set history interval:

1. Click “System Configuration” > “System Parameters” > “History Setting”.
2. Select the history backup “Enable” checkbox.
3. Select a backup interval from the “History Interval” drop-down list. There are five options: 10 minutes, 15 minutes, 30 minutes, 45 minutes and 60 minutes.
4. Input an integer between 0 and 6000 to set the maximum history records per indoor unit. Please note that the more records to keep, the more system resources will be consumed.
5. Click “Save” button.

## BACnet Configuration

In “BACnet Configuration” section, you may export the properties of an indoor unit as BACnet points, so that the indoor unit can be incorporated into the BACnet network and be controlled by other BACnet devices. The properties of one indoor unit will be exported as 12 BACnet points.



To convert the properties of indoor units to BACnet points, please:

1. Select “Enable” checkbox next to Export Data Point.
2. Input a Local Device Instance Number.

When setting a local device instance number, be noted that this instance number should be unique in the BACnet network that the indoor unit will join in, and it must be an integer between 0 and 4194303.

3. Input a Network Number.

In network number, you need input the BACnet network number that the indoor unit will join in, and the network number must be an integer between 1 and 65535.

4. Select the adapter to bind from “Bind Adapter” drop-down list, default is LAN2.

5. Click the “Confirm” button.

Assuming the gateway address of an indoor unit is XX, and address of indoor unit is YY, and index of indoor unit is ZZ, then the BACnet points of that indoor unit exported by the system is:

BACnet point name	Source data point	BACnet point type	BACnet instance number
Indoor_OnOff_BO_XX_YY	On Status	BO	10000+ZZ
Indoor_OnOff_BI_XX_YY	On Status	BI	20000+ZZ
Indoor_WorkMode_MSO_XX_YY	Work Mode	MSO	50000+ZZ*3
Indoor_WorkMode_MSI_XX_YY	Work Mode	MSI	60000+ZZ*3
Indoor_WindSpeed_MSO_XX_YY	Wind Speed	MSO	50000+ZZ*3+1
Indoor_WindSpeed_MSI_XX_YY	Wind Speed	MSI	60000+ZZ*3+1
Indoor_ControlMode_MSO_XX_YY	Control Mode	MSO	50000+ZZ*3+2
Indoor_ControlMode_MSI_XX_YY	Control Mode	MSI	60000+ZZ*3+2
Indoor_SetPoint_AO_XX_YY	Set Point	AO	30000+ZZ
Indoor_SetPoint_AI_XX_YY	Set Point	AI	40000+ZZ*2
Indoor_RoomTemperature_AI_XX_YY	RoomTemp	AI	40000+ZZ*2+1
Indoor_ErrorCode_AI_XX_YY	Fault Code	AV	70000+ZZ

The index of indoor units is determined by the gateway address of indoor unit and the order of indoor unit address. Under different gateway, indoor unit with low gateway address has the prior index. Under the same gateway, indoor unit with high gateway address has the prior index.

After adding or deleting indoor units, current indoor unit index may change.

## Facility/Device import/export

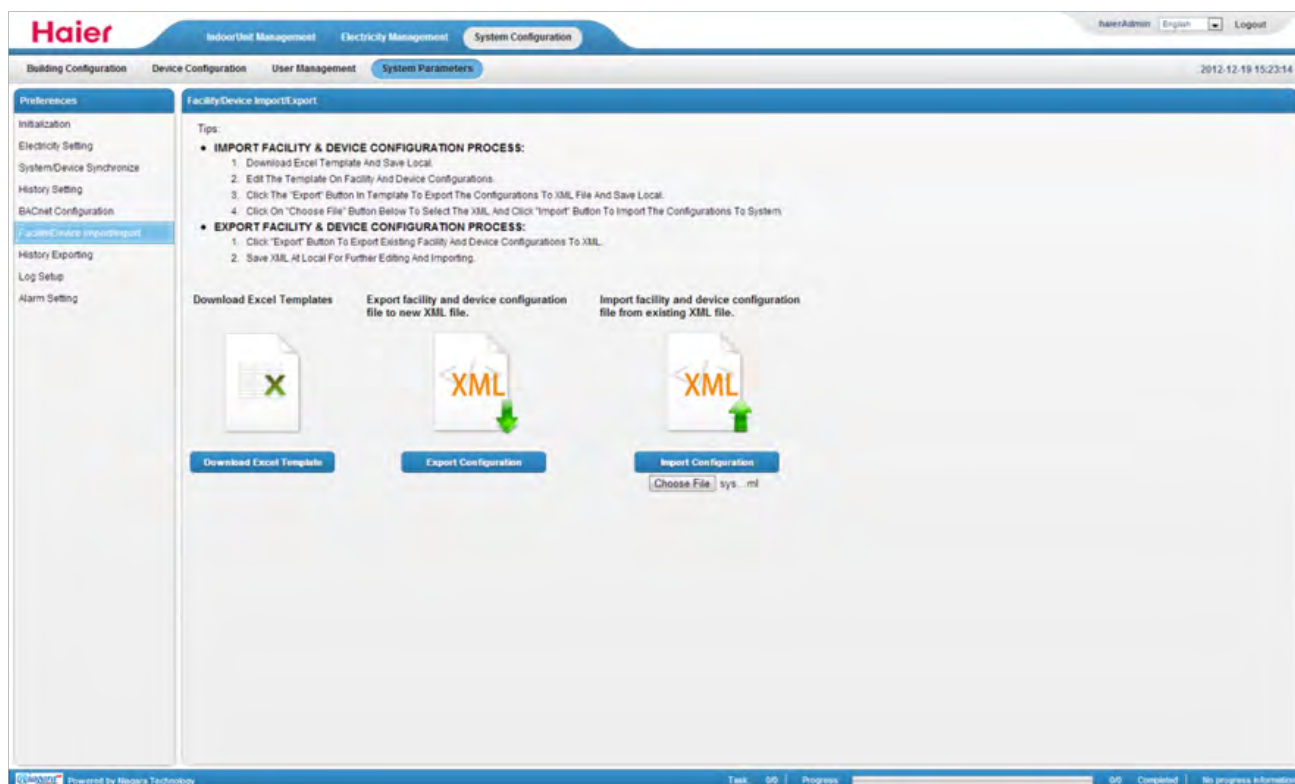
The template provided by the system enables you to configure buildings and devices in bulk, so this feature is very helpful when configuring similar buildings and devices.

Be cautious when you decide to use this feature, this is only recommended to be used by experienced engineers who is familiar to this VRF supervisor system perfectly.

### **Warning**

When importing the xml file with building/device configuration, buildings and devices that exists in system originally will be deleted. Once you fail to import the configuration, system configurations will be missing.

It's suggested always backup existing configurations in system to your local machine by pressing "Export Configuration" button before importing configuration XML file, to make sure you can return to the status before importing.



The screenshot displays the Haier VRF Supervisor System Configuration interface. The main menu includes Building Configuration, Device Configuration, User Management, and System Parameters. The current view is the Facility/Device Import/Export section, which provides instructions and buttons for managing configurations.

**Facility/Device Import/Export**

Tips:

- IMPORT FACILITY & DEVICE CONFIGURATION PROCESS:**
  - Download Excel Template And Save Local.
  - Edit The Template On Facility And Device Configurations.
  - Click The "Export" Button In Template To Export The Configurations To XML File And Save Local.
  - Click On "Choose File" Button Below To Select The XML, And Click "Import" Button To Import The Configurations To System.
- EXPORT FACILITY & DEVICE CONFIGURATION PROCESS:**
  - Click "Export" Button To Export Existing Facility And Device Configurations To XML.
  - Save XML At Local For Further Editing And Importing.

Download Excel Templates    Export facility and device configuration file to new XML file.    Import facility and device configuration file from existing XML file.

Buttons: Download Excel Template, Export Configuration, Import Configuration (with Choose File button).

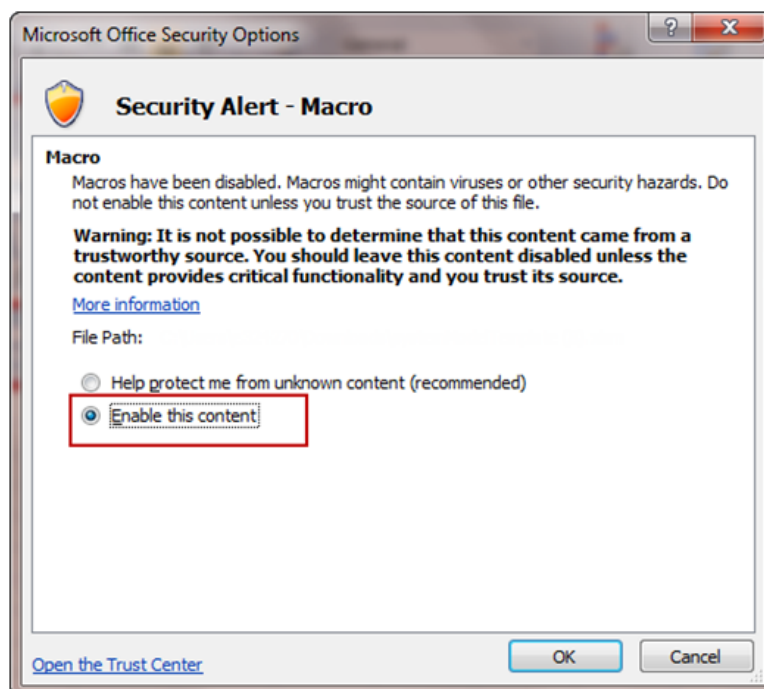
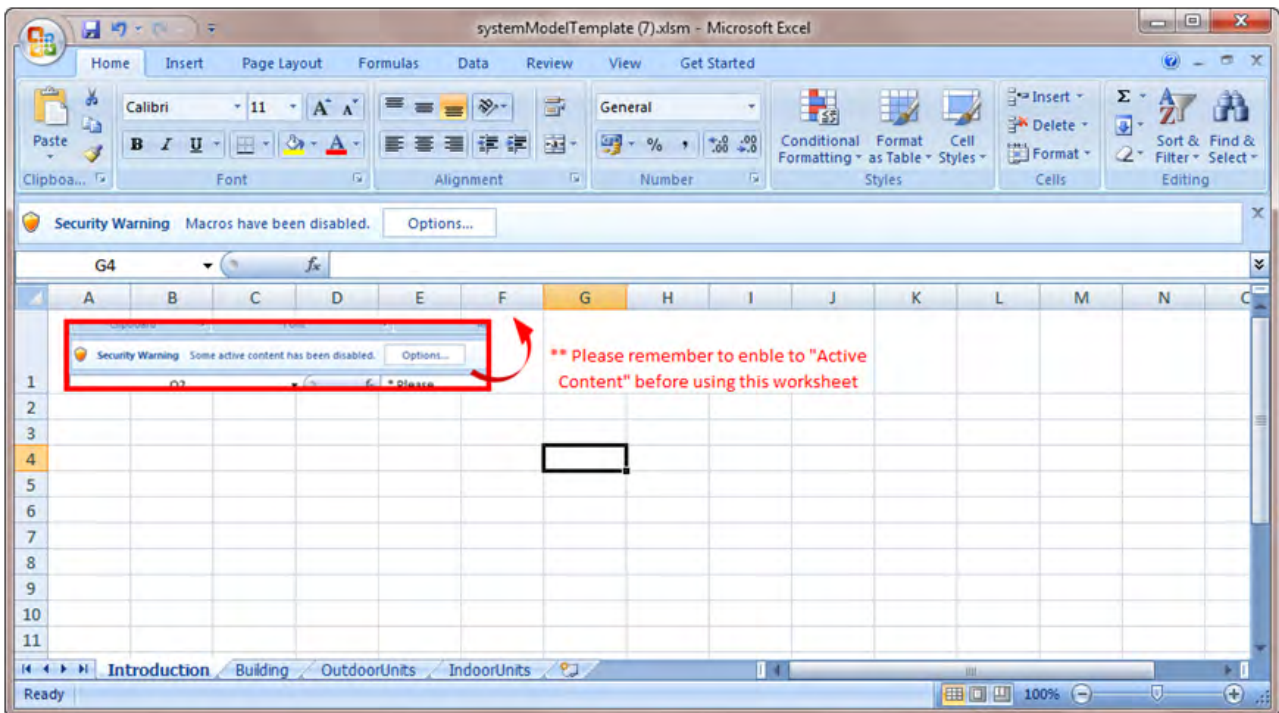
Footer: Powered by Hitegra Technology. Task: 0/0 Progress: 0/0 Completed. No progress information.



## Configuration Template

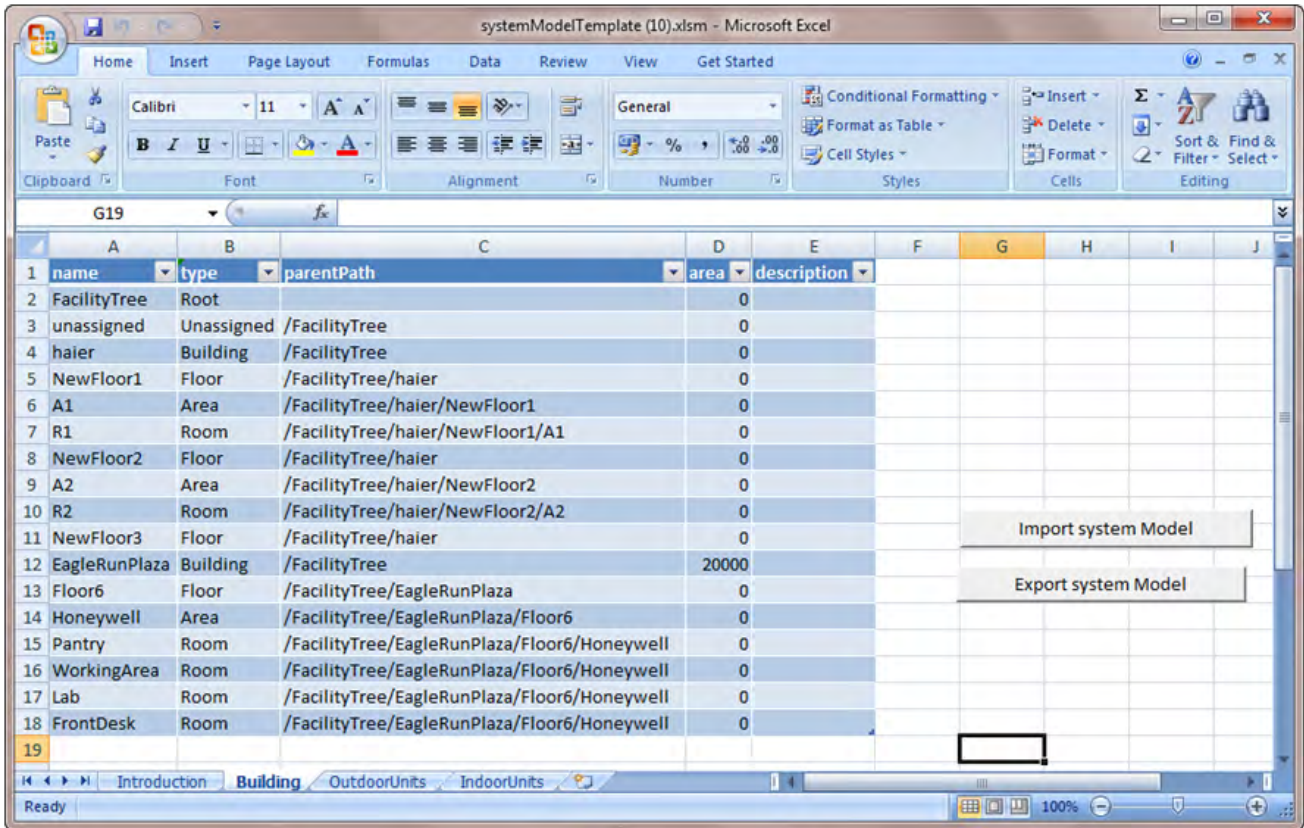
The configuration table contains 4 spreadsheets: Introduction, Building, Outdoor Units and Indoor Units, as shown in the following figures:

1. Introduction spreadsheet describes the notice of using template. You must click “Options” button and then click “Enable this content” to activate contents to use this template.



2. Buildings spreadsheet contains name, type, parent path, area and description columns.

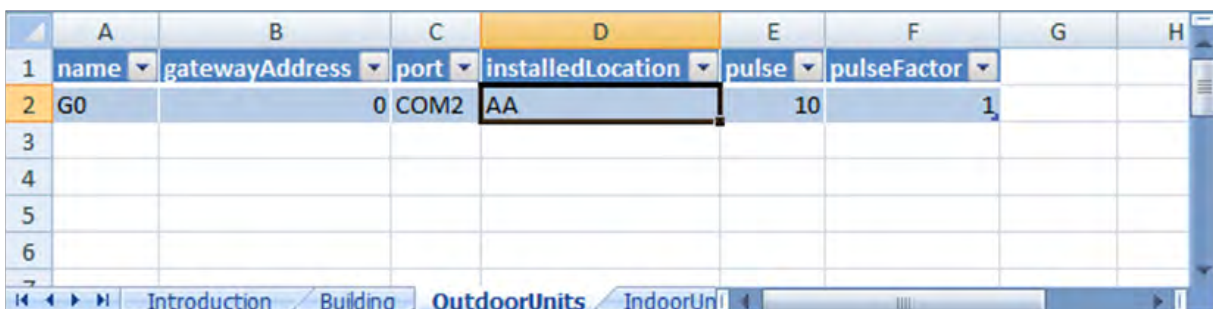
Property	Description
Name	locality name
Type	Type has 6 options, "Root", "unassigned", "Building", "Floor", "Area" and "Room". Note: Do not delete Root and unassigned, or import will fail.
Parent path	The location that the new locality belongs to.
Area	The area value of the new locality
Description	Description of new locality



Building spreadsheet

3. Outdoor Units spreadsheet contains name, gateway Address, port, installed Location, pulse, and pulse Factor columns.

Property	Description
Name	Name of outdoor unit
gateway Address	Gateway address (which ranges from 0 to 31)
installed Location	Install localization of outdoor unit
Pulse	Pulse number
pulse Factor	Pulse multiple

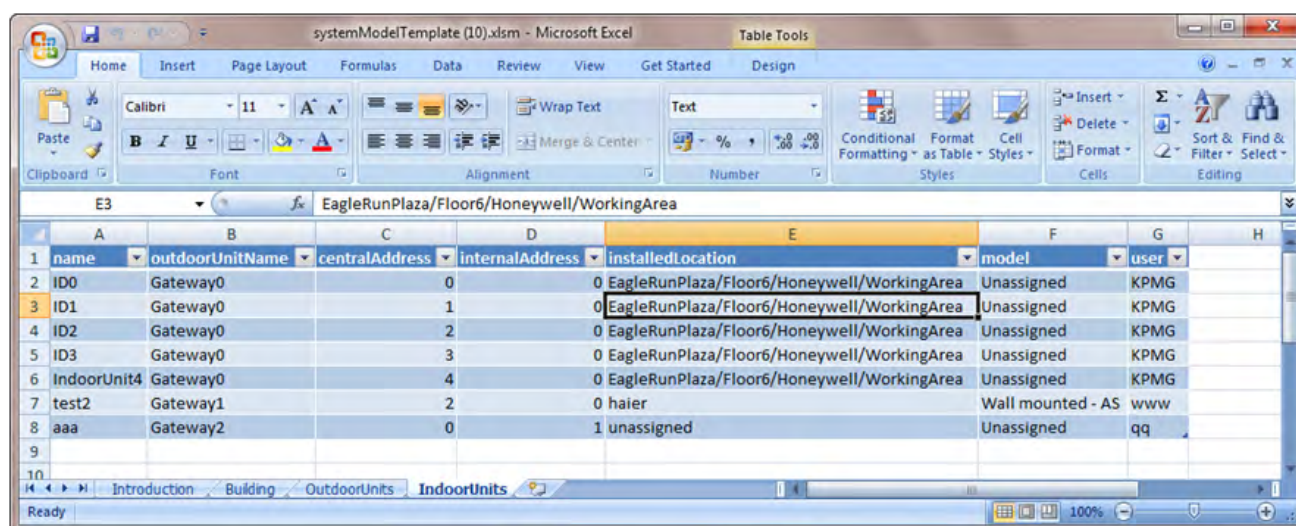


Outdoor Units spreadsheet



4. Indoor Units spreadsheet includes the following properties:

Property	Description
Name	Name of indoor unit
Outdoor Unit Name	Name of outdoor unit
Central Address	Central address (which ranges from 0 to 63)
Internal Address	Internal address in group (which ranges from 0 to 15, this is the address managed by central controller, default is 0; if set to value other than 0, then the indoor unit can only be monitored but cannot be controlled, and you can control the indoor unit only through the remote controller.)
Installed Location	Install position of indoor unit <ul style="list-style-type: none"> <li>•Keep default “unassigned” will not set the install position of indoor unit</li> <li>•To set the install position, be noted that install position should consist of the values in “name” and “parent Path” in Outdoor Units spreadsheet.</li> </ul> For example, assuming name is “Working Area”, parent Path is “/FacilityTree/EagleRun Plaza/Floor6/Honeywell”, and then install position is “EagleRunPlaza/Floor6/Honeywell/Working Area”.
Model	Model of air conditioner
user	End user of the indoor unit



Perform the following steps to configure buildings and devices in bulk:

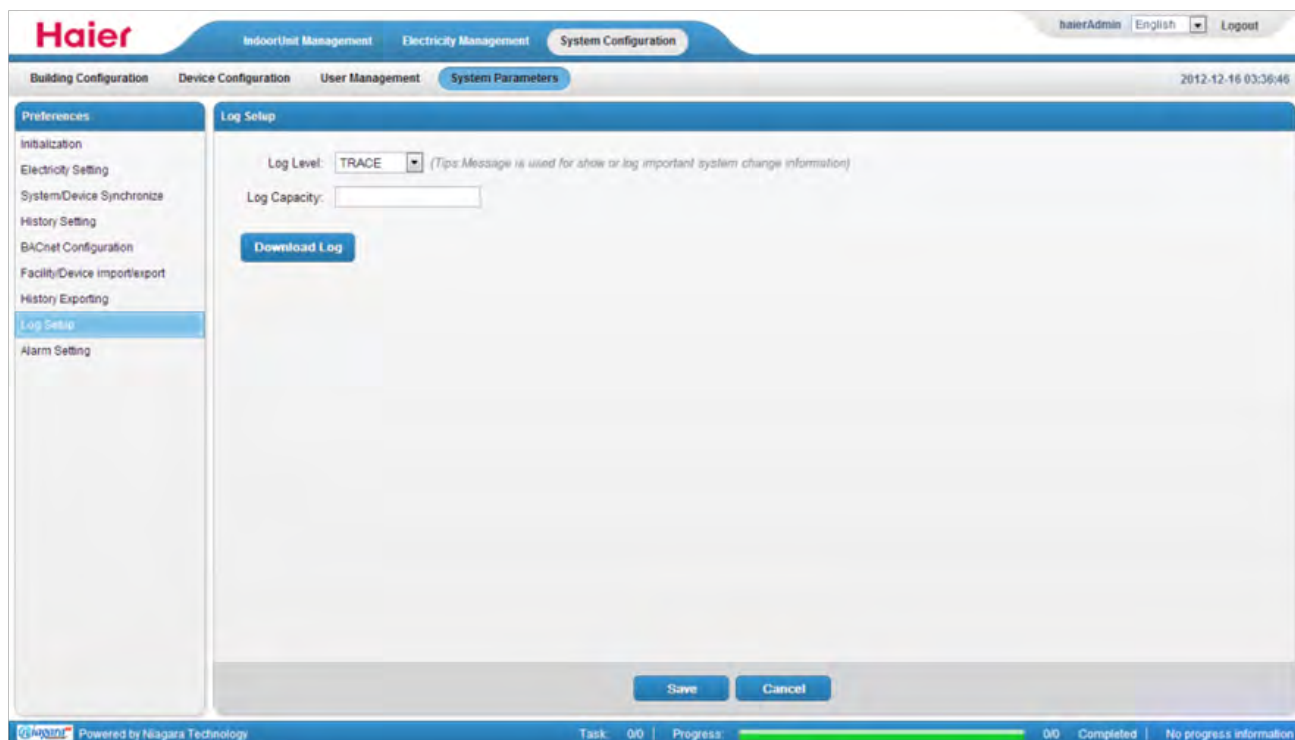
1. Click “System Configuration” > “System Parameters” > “Facility/Device Import/Export”.
2. Click “Download Excel Template” to get systemModelTemplate.xlsx file.
3. Click “Export Configuration” next to “Download Excel Template” to get systemModelConfig.xml file.
4. Locate and open systemModelTemplate.xlsx file.
5. Click “Import system model” to import systemModelConfig.xml file.
6. Edit the configuration of buildings and devices in the template.
7. Click “Export System Model” button in template to export configurations to an XML file and save it locally.
8. Click “Choose File” button to select the XML saved in last step and click “Import Configuration” button to import the configurations from xml file to system.

Perform the following steps to export building and device configurations:

1. Click “Export Configuration” button to export existing facility and device configurations to XML file.
2. Save this XML file at a location in your machine for further use.

## Log Setup

You can configure system log in “Log Setup” section.



There're two log levels “Message” and “Trace” in the system, where “Message” is used to show or log important system changes; “Trace” is used for debugging.

Perform the following steps to set system log:

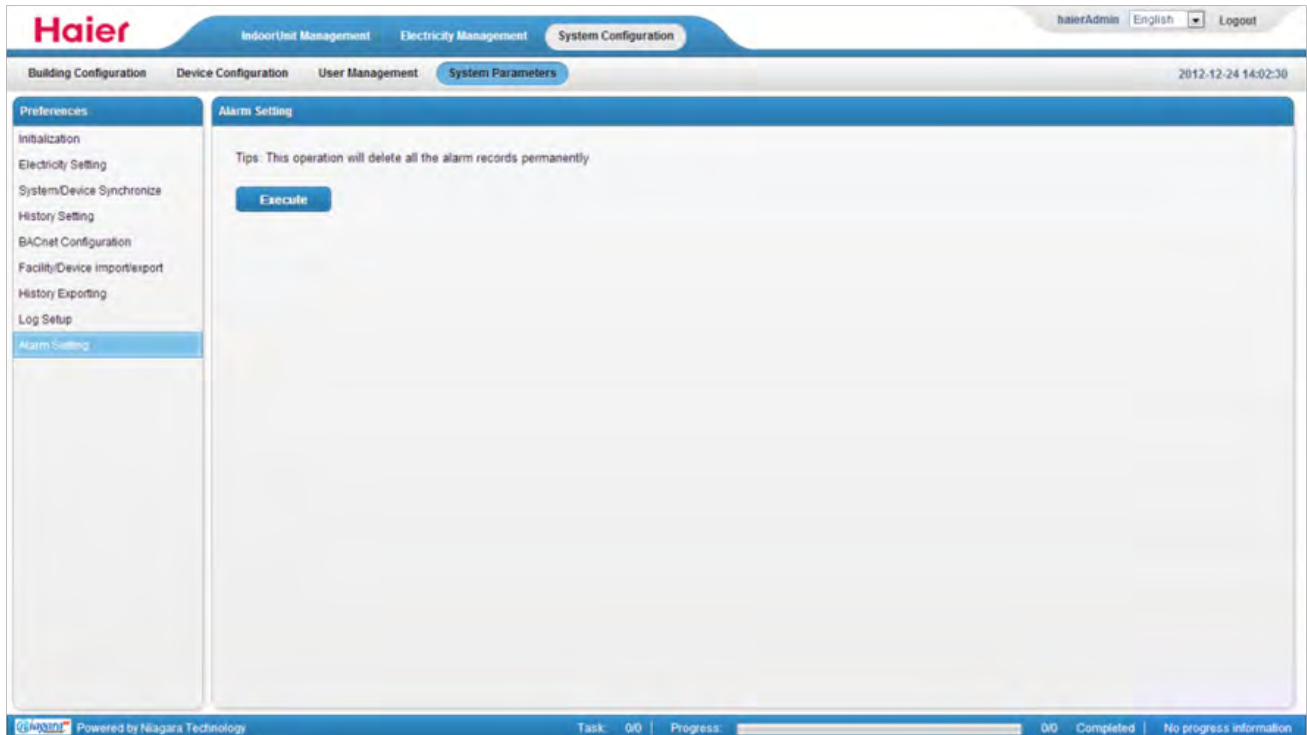
1. Select a desired log level.
  2. Input an integer between 500 and 25000 in the “Log Capacity” field to set the records of log that the system will keep.
- Note: the system will only keep the specified number of logs; old logs will be overwritten once the number of logs exceeds the number specified in “Log Capacity” field.
3. Click “Save” button.

To check system logs, click “Download Log” button to download logs to your computer.

## Alarm Setting

In “Alarm Setting” section, you can delete all alarms in the system. Perform this deletion only when you’re the system administrator and have finished system configuration before handing over the system to the customer.

Be cautious on deletion because this cannot be reverted.



Perform the following steps to delete all alarms in the system:

1. Click “Execute” button.
2. Click “OK” to confirm the deletion.

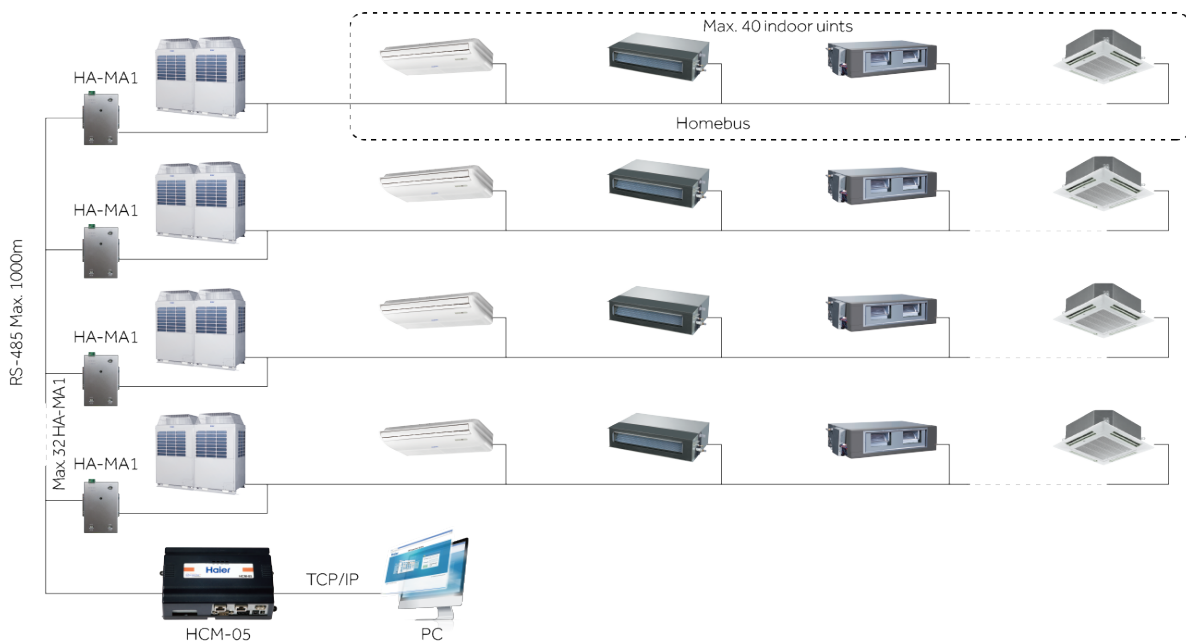
## 5.4 HCM-05



MRV	LCAC			
	Smart Power	Super Match	R410A ON/OFF	R22 ON/OFF
√	√	√		

- Remote monitoring version
- Third party interface: BACnet ip
- Max. 250 indoor units can be controlled for f HCM-05;
- Max. 32 systems. Each system requires one HA-M\*1.
- Operation status setting & monitoring.
- Schedule setting
- Multi user management with different authorized levels
- Operation and Error history log
- Power consumption report when connected with IGU02

## HCM-05 System



- Max. 32 HA-M\*1 for each HCM-05
- Max. 40 indoor units for each HA-M\*1
- Max.250 indoor units can be controlled by one HCM-05

This installation and configuration guide covers the mounting and wiring of the HCM-05 controller, and how to configure VRF Supervisor system. It assumes that you are an engineer, technician, or service person who is performing control system installation. Instructions in this guide apply to the following products:

### Models Description

HCM-05 controller, powered by (either1):

NPB-PWR 24Vac/dc input/15Vdc output power module, DIN mountable

NPB-PWR-UN 90–263Vac universal input/15Vdc output power module, DIN mountable

WPB-XXX Wall-mount universal AC power adapter, with different models available,

Where -XXX is either: -US, -EUR, or -UK (vary by AC wall plug).

1. In some markets, an IO-34 accessory module is available, which can power the HCM-05.

### Related Documentation

For more information on configuring and using the HCM-05 controller, consult the following documents:

- HCM-05\_InstallGuide

## Preparation

Unpack the HCM-05 and power module (NPB-PWR, NPB-PWR-UN, or WPM-XXX) and inspect the package contents for damaged or missing components. If damaged, notify the appropriate carrier at once and return any damaged components for immediate repair or replacement.

- Included in this Package
- Material and Tools Required

## Included in this Package

Included in this package you should find the following items:

- HCM-05 controller
- HCM-05 Mounting and Wiring Instructions
- A hardware bag containing the following items:
  - A grounding wire, with quick-disconnect 0.187" female connector.
- A power module (if ordered), which is required for operation.
  - The power module can be one of the following:
    - NPB-PWR: 24Vac in-line, DIN-mount capable, with grounding wire, or
    - NPB-PWR-UN: 90-263 VAC in-line, DIN-mount capable, with grounding wire, or
    - WPM-XXX: External wall-mount power adapter (input: 90–254Vac, 50–60 Hz, output: 15Vdc, 1A) Where  
XXX  
varies by the AC wall plug (for installation locale), such as:  
WPM-US (U.S. or Japan installations), WPM-EUR (European installations, type "C" plug)  
WPM-UK (United Kingdom installations, type "B" plug)

## Material and Tools Required

The following supplies and tools may be required for installation:

- DIN rail, type NS35/7.5 (35mm x 7.5mm) and DIN rail end-clips (stop clips), recommended for any installation that includes NPB-PWR or NPB-PWR-UN module and/or optional I/O modules.

Note: Length of DIN rail is determined by the number of optional DIN-mounted options. See Figure 1 for details.

- If using an NPB-PWR power module, either one of the following:
  - UL listed, Class 2, 24Vac transformer, rated at minimum of 8.5VA to 20VA (approximate range of HCM-05 alone, to fully-expanded unit with four additional IO-16 modules and other option boards). Note that a dedicated transformer is required (cannot also power additional equipment).
  - 24Vdc power supply, capable of supplying at least 1A (24W).
- Suitable screws and screwdriver for mounting DIN rail, or if DIN rail not used, for mounting bases of HCM-05 controller, NPB-PWR or NPB-PWR-UN module (if used), and any I/O modules (if used).
- #2 Phillips screwdriver: used to install and remove optional communications modules.
- Small flat-blade screwdriver: used for mounting or removing the HCM-05 from DIN rail, also for making wiring connections to RS-485 connector, and optionally LON and I/O connectors.

## Precautions

This guide uses the following warning and caution conventions:



### Caution

Cautions remind the reader to be careful. They alert readers to situations where there is a chance that the reader might perform an action that cannot be undone, might receive unexpected results, or might lose data. Cautions contain an explanation of why the action is potentially problematic.



### Warning

Warnings alert the reader to proceed with extreme care. They alert readers to situations where there is a chance that the reader might do something that can result in personal injury or equipment damage. Warnings contain an explanation of why the action is potentially dangerous.

## Safety Precautions

The following items are warnings of a general nature relating to the installation and start-up of the HCM-05 controller. Be sure to heed these warnings to prevent personal injury or equipment damage.



### Warning

Depending on power module used, the circuit powering the HCM-05 is 90–263Vac at 50/60 Hz (if using NPB-PWR-UN), 24Vac at 50/60 Hz or 24Vdc (if using NPB-PWR), or from 100–240Vac at 50/60 Hz (if using NPB-WPM-XXX).

Disconnect power before installation or servicing to prevent electrical shock or equipment damage.

- Make all connections in accordance with national and local electrical codes. Use copper conductors only.
- To reduce the risk of fire or electrical shock, install in a controlled environment relatively free of contaminants.
- This device is only intended for use as a monitoring and control device. To prevent data loss or equipment damage, do not use it for any other purpose.

## Static Discharge Precautions

Static charges produce voltages high enough to damage electronic components. The microprocessors and associated circuitry within a HCM-05 controller are sensitive to static discharge. Follow these precautions when installing, servicing, or operating the system:



### Caution

- work in a static-free area.
- Discharge any static electricity you may have accumulated. Discharge static electricity by touching a known, securely grounded object.
- Do not handle the printed circuit board (PCB) without proper protection against static discharge. Use a wrist strap when handling PCBs. The wrist strap clamp must be secured to earth ground.



## • Mounting

Mount the HCM-05 controller in a location that allows clearance for wiring, servicing, and module removal. Additional mounting information applies, as follows:

- Environmental Requirements
- Physical Mounting

## • Environmental Requirements

Note the following requirements for the HCM-05 mounting location:

- This product is intended for indoor use only. Do not expose the unit to ambient conditions outside of the range of 0°C (32° F) to 50°C (122° F) and relative humidity outside the range 5% to 95% non-condensing (pollution degree 1).
- If mounting inside an enclosure, that enclosure should be designed to keep the unit within its required operating range considering a 20-watt dissipation by the controller, plus dissipation from any other devices installed in the same enclosure. This is especially important if the controller is mounted inside an enclosure with other heat producing equipment.
- Do not mount the unit:
  - in an area where excessive moisture, corrosive fumes, or explosive vapors are present.
  - where vibration or shock is likely to occur.
  - in a location subject to electrical noise. This includes the proximity of large electrical contractors, electrical machinery, welding equipment, spark igniters, and variable frequency drives.

### Physical Mounting

The following information applies about physically mounting the unit.

- You can mount the HCM-05 in any orientation. It is not necessary to remove the cover before mounting.
- Mounting on a 35mm wide DIN rail is recommended. The HCM-05 unit base has a molded DIN rail slot and locking clip, as do the power modules (NPB-PWR, NPB-PWR-UN) and both types of I/O expansion modules. Mounting on a DIN rail ensures accurate alignment of connectors between all modules.
- If DIN rail mounting is impractical, you can use screws in mounting tabs on the HCM-05, then in any end-connected accessory (NPB-PWR, etc.). See Tab Mounting Dimensions.

The following procedure provides step-by-step DIN rail mounting instructions for the HCM-05.

Note Mount the HCM-05 prior to mounting any accessory items (24V power module, I/O modules).

### Procedure 1 To mount on DIN rail

Step 1 Securely install the DIN rail using at least two screws, near both ends of the rail.

Step 2 Position the HCM-05 on the rail, tilting to hook DIN rail tabs over one edge of the DIN rail (Figure 1).

Step 3 Use a screwdriver to pry down the plastic locking clip, and push down and in on the HCM-05, to force the locking clip to snap over the other edge of the DIN rail.

Step 4 Mount any accessory item (NPB-PWR, I/O module) onto the DIN rail in the same manner.

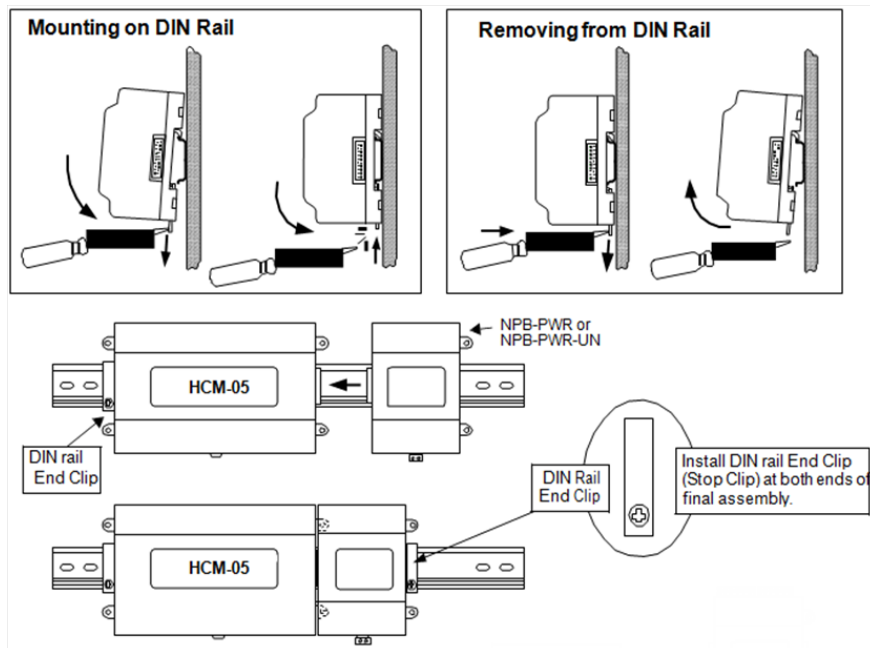
Step 5 Slide the accessory along the DIN rail to connect its 20-position plug into the HCM-05.

Step 6 Repeat this for all accessories, until all are mounted on the DIN rail and firmly connected to each other.

Step 7 To keep the final assembly together, secure at both ends with DIN rail end-clips provided by the DIN rail vendor. This also prevents the assembly from sliding on the DIN rail. See Figure 1.



Figure 1 HCM-05 and accessory mounting details



## Removing and Replacing the Cover

You must remove the HCM-05 cover to connect the battery (new unit) or to replace the battery, and to install any option boards. The cover snaps onto the base with four plastic tabs (two on each end).

To remove the cover, press in the four tabs on both ends of the unit, and lift the cover off.

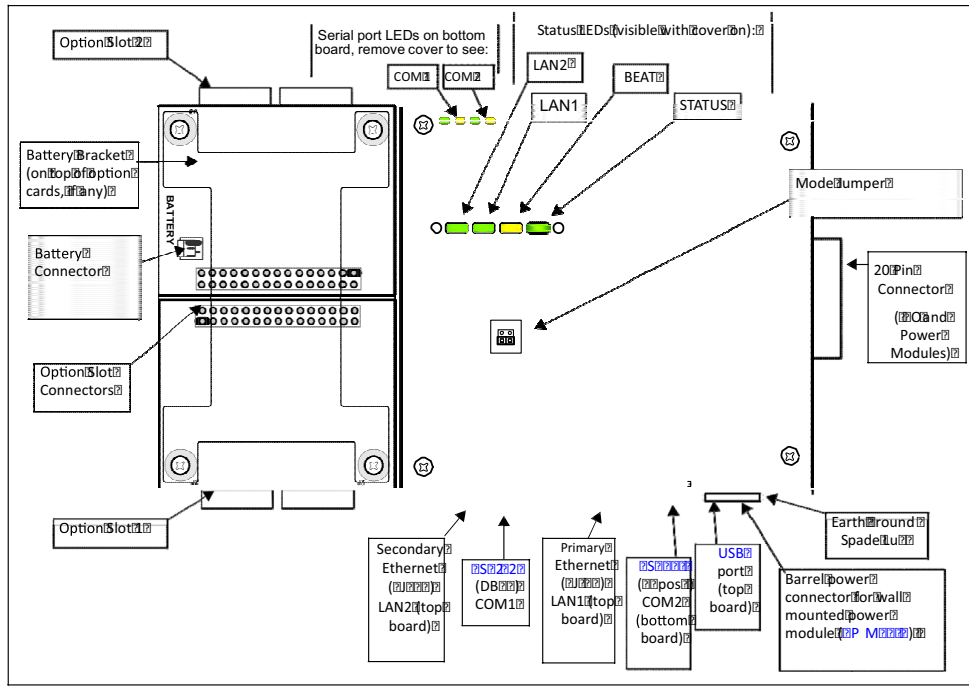
Note: If accessory modules are plugged into the HCM-05, you may need to slide them away from the unit to get to the cover tabs.

To replace the cover, orient it so the cutout area for communication ports is correct, and then push inwards to snap in place.

## Board Layout

Figure 2 shows the location of LEDs, option slots, and other features of the HCM-05 with cover removed. For a side view of communications ports and other features, see Figure 5 on page 13.

Figure 2 HCM-05 board layout details



## Wiring

See Figure 2 to locate connectors and other components on the HCM-05 controller.

Make connections to the HCM-05 in the following order.

1. Install any option boards (LON, RS-485, RS-232, or modem) in option slots 1 and 2. For complete details, refer to the specific mounting and wiring guide that shipped with the option board.
2. Connect supplied earth grounding wires (with spade connector) from the earth ground lug on the HCM-05 and any accessory modules (if used) to a nearby earth grounding point. See “Grounding” for details.
3. Prepare power wiring (leave the unit powered off). See “Power Wiring” for details.
4. Connect communications cables. Connect the positive and negative of RS-485 on device to the positive and negative of RS-485 on Haier outdoor unit. See “Communications Wiring” for ports available on the HCM-05 base unit. For ports on any installed option board (LON, RS-485, modem) see the specific mounting and wiring guide for any additional details.
5. If IO accessory modules are installed, connect the I/O wiring. Refer to the appropriate mounting and wiring guide for complete details.
6. Connect the backup battery to the HCM-05 battery connector, and apply power to the unit.

## Grounding

An earth ground spade lug (0.187") is provided on the base of the HCM-05 for connection to earth ground. For maximum protection from electrostatic discharge or other forms of EMI, connect the supplied earth grounding wire to this lug and a nearby earth ground (see Figure 3). Keep this wire as short as possible.

Power is provided for HCM-05 plug-in accessory modules through the 20-pin accessory connectors. However, you should also connect the earth ground spade lug of each accessory module to ground in the same manner.

## Power Wiring

The HCM-05 must be powered by an approved 15 VDC power source. This can be either an external wall mount AC adapter (WPM-XXX), a DIN-mount 24Vac/dc-powered module (NPB-PWR), or a DIN-mount line line-powered (90–263 VAC) module (NPB-PWR-UN).

The HCM-05 controller does not include an on/off switch. To apply power, you either:

- If WPM-XXX, plug in the power connector to the HCM-05.
- If NPB-PWR, plug in its 2-position power connector.
- If NPB-PWR-UN, energize the AC circuit (90–263 VAC) wired to that module.



### Caution

Do not connect both the WPM-XXX and NPB-PWR / NPB-PWR-UN supplies at the same time, or equipment damage may result.

If desired, you can use the wall mount WPM-XXX in your office (to initially commission the HCM-05), and then install the HCM-05 at the job using either an NPB-PWR or NPB-PWR-UN module. The following sections provide more details:

WPM-XXX (Wall Power Modules)

- NPB-PWR (24Vac/dc-powered in-line module)
- NPB-PWR-UN (Universal 90V–263Vac-powered in-line module)

## WPM-XXX

All models of wall power modules (US, EUR, UK, JA) are self-contained, isolated, switching power supplies designed to plug into a standard building power receptacle of appropriate voltage. To supply power to the HCM-05, you then simply plug the barrel connector plug from the WPM-XXX into the barrel power connector on the HCM-05 base board (See Figure 5).



### Caution

Do not plug the barrel connector plug from the WPM-XXX into the HCM-05 until all other mounting and wiring is completed.

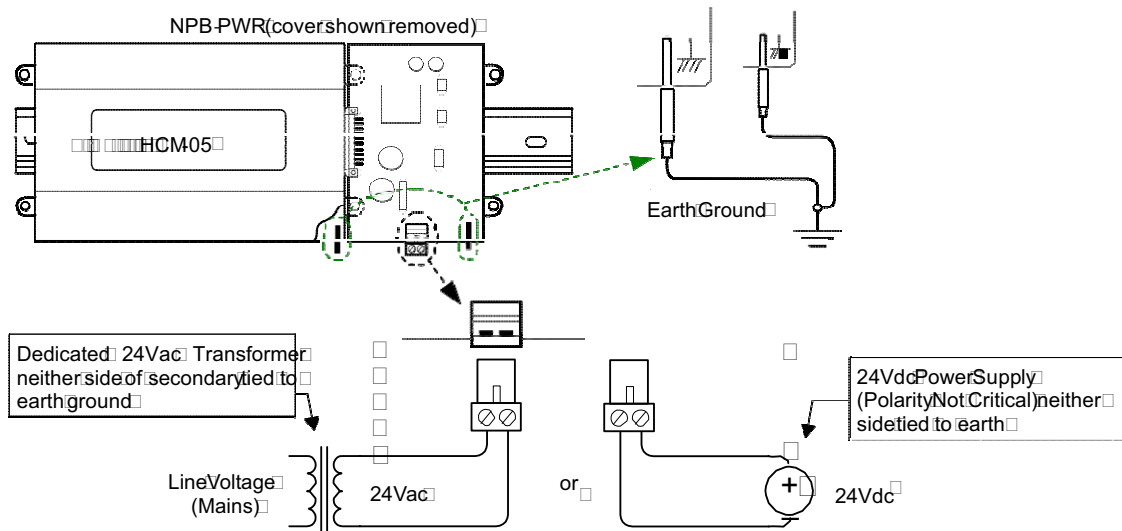
## NPB-PWR

Using the NPB-PWR module lets you power the HCM-05 (and if installed, IO-16 modules) from a dedicated Class 2, 24Vac transformer, or from a 24Vdc power supply. If installing IO-16 modules, the NPB-PWR installs as the last (end) module in the chain. See Figure 1

1. In some markets, a fourth power option is available: an IO-34 accessory module, which is a combination of the NPB-PWR module and two IO-16 modules (plus two extra relays). Please refer to its mounting and wiring instructions document for more details.

Note: If powering from a 24V transformer, do not power any other equipment with it. Otherwise, conducted noise problems may result. Also, do not ground either side of the transformer's 24V secondary.

Figure 3 NPB-PWR module wiring connections.



Located at the bottom of the NPB-PWR module is a 2-position power connector, and an earth ground spade lug, as shown in Figure 3.

Connect the supplied earth ground wire to a nearby earth ground point. Unplug the power connector plug from the module and make connections to it as shown in Figure 3.



### Caution

Do not plug 24V power into the NPB-PWR (reinsert connector plug) until all other mounting and wiring is completed. Power consumption depends on installed accessories and option boards, and may vary from:

- HCM-05 with NPB-PWR module alone: approximately 8.5 VA (AC) or 8.5 W (DC)
- HCM-05 with NPB-PWR and four (4) IO-16 modules, plus option boards: up to 20 VA (AC) or 20 W (DC)

### NPB-PWR-UN

The NPB-PWR-UN module lets you power the HCM-05 (and if installed, IO-16 modules) from AC line power, with a universal input range from 90–263Vac. If installing IO-16 modules, the NPB-PWR-UN installs as the last (end) module in the chain. See Figure 1.

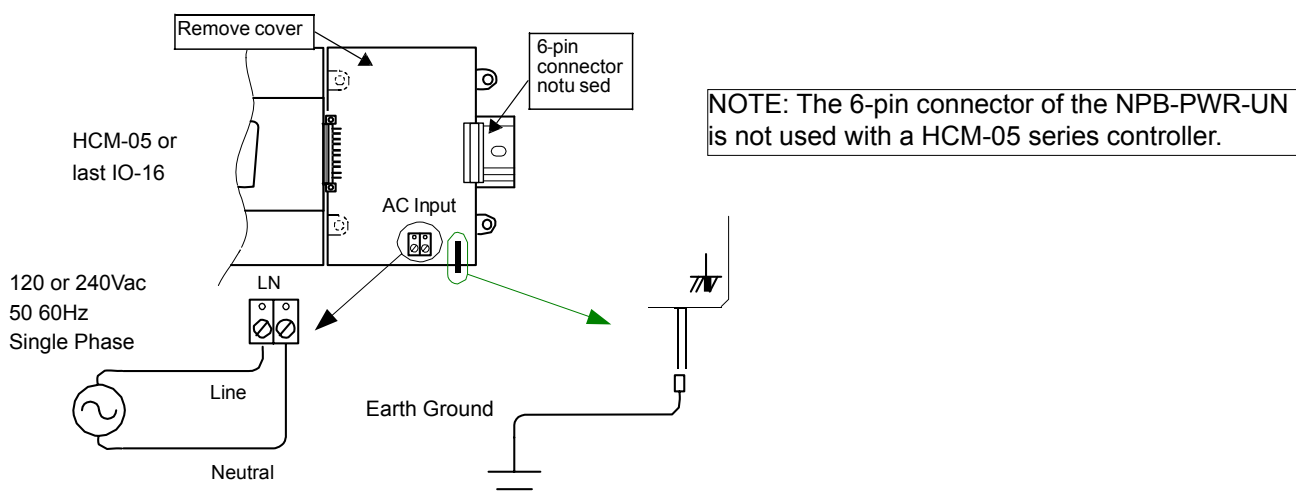


### Warning

- A 120Vac or 240Vac circuit powers the NPB-PWR-UN. Disconnect power to this circuit before installation to prevent electrical shock or equipment damage.
- Make all connections in accordance with national and local electrical codes. Use copper conductors only.
- Do not exceed the 30W capacity of NPB-PWR-UN by the powered devices.

Power input connections are made to the terminals on the circuit board (cover removal is required). An earth ground connection must be made to the grounding lug using the supplied earth wire. See Figure 4.

Figure 4 NPB-PWR-UN module wiring connections.



### Procedure 3 Wiring NPB-PWR-UN input power and earth ground

- Step 1 Remove power from the AC circuit being wired to the NPB-PWR-UN—see previous Warning •.
- Step 2 Remove the NPB-PWR-UN cover.  
To do this, press in the four tabs on both ends of the unit, and lift the cover off.
- Step 3 If the HCM-05 or an IO-16 accessory module is plugged into the unit, you may need to slide it away to get to the cover tabs.
- Step 4 Connect the supplied earth grounding wire to a nearby grounding point. See Figure 4.
- Step 5 Make AC circuit connections line (mains) and neutral to the terminals labeled “INPUT PWR.”
- Step 6 Replace the cover on the NPB-PWR-UN.  
Make sure all modules in the mounted assembly are firmly connected together and secured.



### Caution

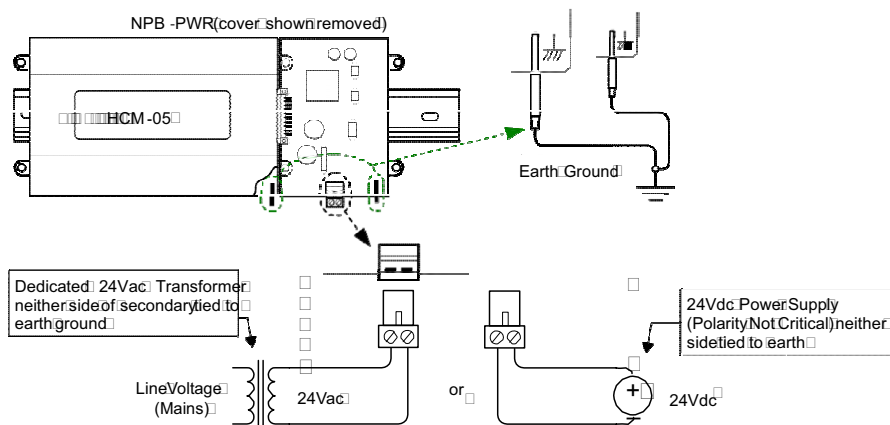
Do not energize the AC circuit wired to the NPB-PWR-UN until all other HCM-05 mounting and wiring is completed.

### Communications Wiring

Connect communications wiring to the HCM-05 using ports on the bottom of the unit (Figure 5), which include:

- Ethernet
- Serial

Note: Prior to connecting cables, provide strain relief for them to prevent damage to the controller.



## Ethernet

Two, female 10/100-Mbit Ethernet connections are provided on the HCM-05. These are RJ-45 connectors labeled LAN2 and LAN1. Use a standard Ethernet patch cable for connecting to a hub or Ethernet switch. An activity LED for each Ethernet port is visible, and are labeled “LAN2” and “LAN1” on the cover.

The factory-default IP address for LAN1 on a HCM-05 is 192.168.1.12n, where the last numeral n in the address matches the HCM-05’s serial number, and subnet mask is 255.255.255.0. By default, LAN2 on a HCM-05 is disabled. Go to VRF supervisor system if you need change IP address.

Note: Typically, you only use LAN1 (primary port), unless you have a specific application for isolating a driver’s network traffic to a separate LAN, using LAN2. Do not use LAN2 as the primary port.

## Serial

There are two serial ports on the HCM-05 base board. Each has a UART capable of operation up to 115,200 baud. At the bottom of the board (see Figure 5), the left port is an RS-232 port using an DB-9 plug (male) connector. To the right of this is a two-wire with shield, isolated RS-485 port, using a screw-terminal connector plug. In addition, on the top board (to the right) is a third, standard USB port.

Note: A green “receive” LED and yellow “transmit” LED are provided for each serial port. These LEDs are located on the bottom board, on the opposite side of the serial connectors (see Figure 2). These LEDs are labeled on the board (COM1, COM2) and are not visible with the cover on.

RS-232—An RS-232 serial port using a male DB-9 connector always operates as COM1. You can use standard DB-9 serial cables with this port. The HCM-05 is a serial DTE device, such another DTE device (PC, for example) requires a “null modem” cable. If connecting the HCM-05 to a DCE device (modem, for example), a straight-through cable is used. Table 1 provides standard serial DB-9 pinouts.

Note: If a modem option card (NPB-MDM) is installed, this port becomes disabled—except if rebooted with the mode jumper (see Figure 2) in the “Serial Shell” position.

Table 1 Serial port (RS-232 and RS-485) pin outs

Base RS-232 DB-9 Port (COM1)				Base RS-485 Port (COM2)
Pin out References	Signal		DB-9 Plug Pin	Pinouts
	DCD	Data carrier detect	1	
	RXD	Receive data	2	
	TXD	Transmit data	3	
	DTR	Data terminal ready	4	
	GND	Ground	5	
	DSR	Data set ready	6	
	RTS	Request to send	7	
	CTS	Clear to send	8	
		not used on the HCM-05		9

**RS-485**— An RS-485, optically isolated port uses a 3-position, screw terminal connector and always operates as COM2. Wire to this connector with shielded 18-22AWG wiring (refer to the TIA/EIA-485 standard). As shown in Table 1, the screw terminals (from left-to-right) are shield, plus (+), and minus (-).

**USB** — A single USB port is on the top board.

*Note: The USB port is for future use.*

## Using Status LEDs

The HCM-05 controller includes several LEDs that can help determine the status of the unit. They are located in two places: the top of the controller (visible through the cover), and for serial ports, on the bottom board (only with cover removed). From left-to-right these LEDs include:

- Ethernet Ports
- Heartbeat
- Status
- Serial Ports

Refer to Figure 2 for the exact locations of status LEDs on the HCM-05 controller.

## Ethernet Ports

Each Ethernet port (“LAN2”, “LAN1”) has one green LED, visible on the top cover.

A “LANx” LED indicates activity on that port as follows:

- Off—No Ethernet link is made
- On—Ethernet link is present, but no activity on the LAN
- Blinking—Ethernet link is present with data activity on the LAN.

## Heartbeat

The “BEAT” LED is located to the right of the Ethernet status LEDs, and is yellow. Under normal operation, this LED should blink about once per second. If the heartbeat LED stays on constantly, does not light, or blinks very fast (more than once per second), contact System Engineering for technical support.



### Caution

During boot-up, the heartbeat LED blinks in a 90% on - 10% off pattern. **Do not remove power** during this time, or data loss may result (I/O module’s firmware upgrade may be in progress).

## Status

The “STATUS” LED is located to the right of the heartbeat (“BEAT”) LED, and is green. This LED provides a CPU machine status check, and should remain lit whenever the HCM-05 is powered. If the STATUS LED does not light while power is applied, contact System Engineering for technical support.

## Serial Ports

LEDs for the two serial ports are located on the HCM-05’s bottom board, on the opposite side of the RS-232 and RS-485 ports (see Figure 2). Labels “COM1” and “COM2” correspond to the software configuration of the COM ports. LEDs show the transmission and receive activity for the serial ports and optional modem.

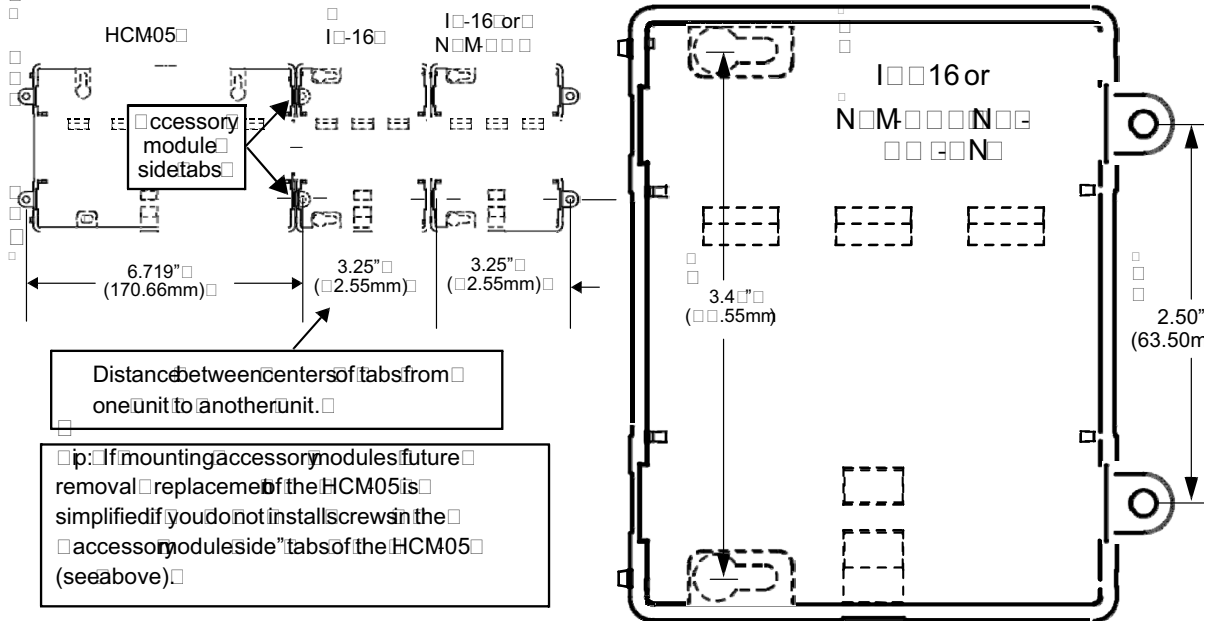
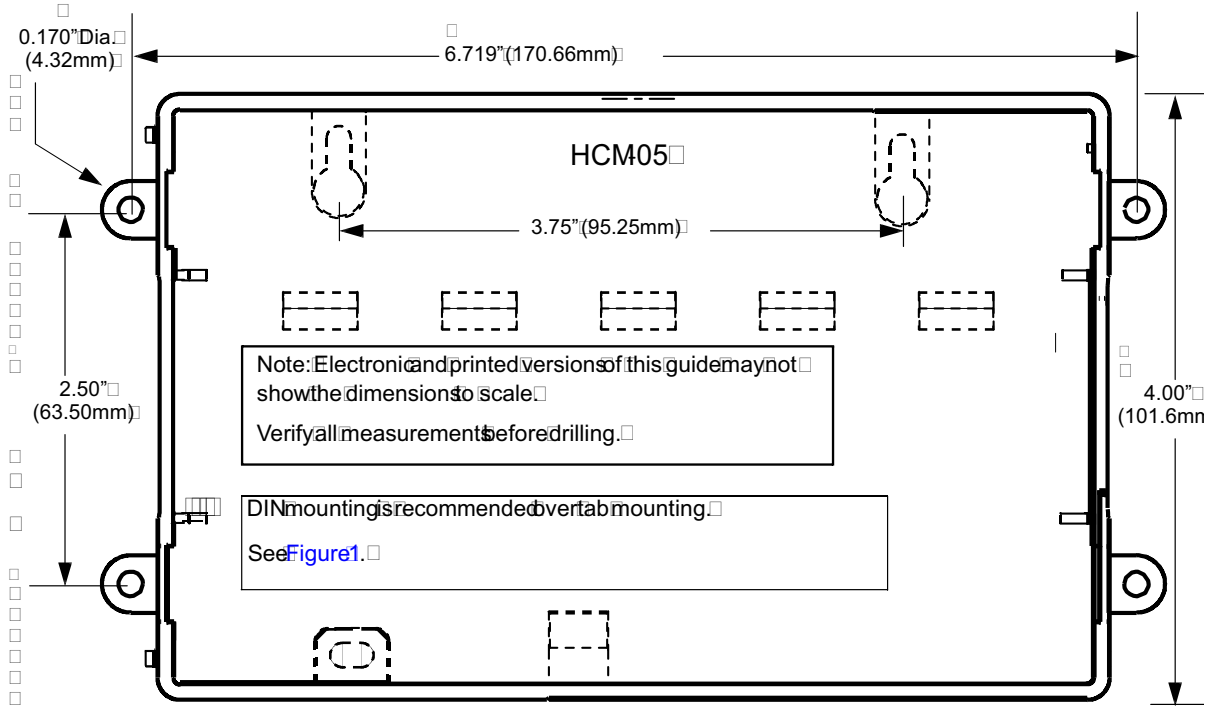
Note: You must remove the cover to the serial port LEDs. See “Removing and Replacing the Cover”.

- The yellow transmit LED indicates that the HCM-05 is sending data out the serial port over a communications line to a connected device.
- The green receive LED indicates that the HCM-05 is receiving data from a connected device.

These LEDs provide a fixed on-time when data is detected on the port. If the receive LED is on constantly, this indicates a problem with the communications channel, such as a shorted wire or reversed wiring.



### Tab Mounting Dimensions



## System Configuration

### Set IP Address

After completing the mounting and wiring, please perform the following steps to set the system IP address in order to establish the connection between the computer and the device:

1. Set the network segment of computer the same as the network segment of IP address that comes with the hardware or document.
2. Make sure using an Ethernet cable connect to the LAN1 port directly (IP address is set on LAN1 by default), so that you can access VRF supervisor system.
3. Open a Google Chrome window.
4. Input the IP address that comes with the hardware or document in the opened Chrome window, type the default user name haier and initial password vrf, and click “Login” (To check the device’s factory-default IP address, please refer to Ethernet).
5. It’s suggested that you change the initial password right away in “System Configuration” > “User Management” during first login.
6. Next, go to “System Configuration” > “System Parameters” > “Initialization” to set the IP address of the LAN2 (The settings of LAN2 IP address vary on if the device is to connect to the BACnet network or not, please refer to Connection Setting for configuration).
7. Reboot the system after finishing all of the above steps.

### Building Configuration

You need configure buildings/floors/locations first after logging into the VRF supervisor system.

Firstly, add buildings by performing the following steps:

1. Click “System Configuration”.
2. Click “Building Configuration” to open the Building Configuration page.
3. Click “Add Building” button.
4. Type a name which consists of letters or numbers in “Building Name” field.
5. Input a number in “Building Area” field.
6. Type a description for the building in “Description” field.
7. Click “Save” button.

The screenshot displays the Haier VRF supervisor system web interface. The top navigation bar includes 'Indoor/Unit Management', 'Electricity Management', and 'System Configuration'. The 'System Configuration' section is active, with sub-tabs for 'Building Configuration', 'Device Configuration', 'User Management', and 'System Parameters'. The 'Building Configuration' page shows a 'Facility List' on the left with 'haier' and '暖通大厦' listed. The main area is titled 'Add Building' and contains three input fields: 'Building Name' (with 'New Building' entered), 'Building Area', and 'Description'. At the bottom, there are 'Cancel' and 'Save' buttons. The footer shows 'Powered by Niagara Technology' and a progress bar indicating 'Task: 0/0 | Progress: 0/0 Completed | No progress information'.

Secondly, perform following steps to add floors:

1. In the Facility List, select the building you want to add a floor.
2. In the right side of the Building Property page, click the “Add Floor” button.
3. Type a name in the “Floor Name” field.
4. "Belong to" field will by default show the full locality path that the new floor will be added to.
5. Input a number in “Floor Area” field.
6. Type a description for the floor in “Description” field.
7. Click “Save” button.

The screenshot displays the Haier System Configuration web interface. The top navigation bar includes 'IndoorUnit Management', 'Electricity Management', and 'System Configuration'. The 'System Configuration' section is active, with sub-tabs for 'Building Configuration', 'Device Configuration', 'User Management', and 'System Parameters'. The 'Building Configuration' sub-tab is selected. On the left, the 'Facility List' sidebar shows a tree structure with 'haier' and '暖通大厦' (HVAC Building) under it. The main content area is titled 'Add Floor:' and contains the following form fields:

- Floor Name:
- Belong to: FacilityTreehaier
- Floor Area:
- Description:

At the bottom of the form are 'Cancel' and 'Save' buttons. The footer of the page shows 'Powered by Niagara Technology' and a progress indicator: 'Task: 0/0 | Progress: 0/0 Completed | No progress information'.

Finally, perform following steps to add locations:

1. In the Facility List, select the floor you want to add a location.
2. In the right side of the Building Property page, click the “Add Location” button.
3. Select the desired type from the “Location Type” drop-down list.
4. Type a name for the new location in the “Zone Name” / “Room Name” field.
5. “Belongs to” field will by default show the full locality path that the new location will be added to.
6. Input a number in “Zone Area” / “Room Area” field.
7. Type a description for the new position in “Description” field.
8. Click “Save” button.

The screenshot displays the Haier Building Configuration web interface. The top navigation bar includes 'IndoorUnit Management', 'Electricity Management', and 'System Configuration'. The main content area is divided into two panels: 'Facility List' on the left and 'Add Location' on the right. The 'Facility List' shows a tree structure with 'haier' at the root, followed by 'NewFloor1', 'NewFloor2', and 'NewFloor3'. The 'Add Location' panel contains the following fields:

- Location Type: A dropdown menu with 'Zone' selected.
- Zone Name: A text input field containing 'New Zone of Room'.
- Belong to: A text input field containing '/FacilityTree/haier/NewFloor1'.
- Zone Area: A text input field containing '0'.
- Description: A large text area for entering a description.

At the bottom of the 'Add Location' panel, there are 'Cancel' and 'Save' buttons. The footer of the interface shows 'Powered by Niagara Technology', 'Task: 0/0', 'Progress: 0/0', and 'Completed | No progress information'.

## Device Configuration

After configuring the facilities, you need to configure the devices. In VRF supervisor system, a device mainly consists of outdoor units, indoor units, pulse electric meter and gateway.

You may configure a group and its indoor units in “Device Configuration” under “System Configuration”.

A group may include 1 outdoor unit (Currently, only one outdoor unit is supported in one group), 1 electric meter (which is connected to outdoor unit, and is used for measuring the consumption of outdoor unit) and 1 gateway.

You need to configure group first, and then configure indoor units.

The Device Configuration page is shown below:

The screenshot displays the 'Device Configuration' interface. On the left, a 'Group List' shows two groups: 'GATEWAY 1 (2)' and 'GATEWAY 2 (0)'. The main panel is titled 'Add Group' and features an 'Outdoor and Pulse Setting' form with the following fields:

- Group ID: GATEWAY 1
- BUS Port: COM2
- Outdoor Addr: 0
- Gateway Addr: 0
- Inst. Position: 101
- Pulse Number: 10
- Pulse Multiple: 1

Below the form is an 'Indoor Unit List' table:

Indoor Unit ID	Gateway Name	Control Addr	Group Addr	Indoor Unit Mode	Installation Position	User
no.1	GATEWAY 1	0	1	Wall mounted - AS	office building/first	manager
no.2	GATEWAY 1	1	2	Low static pressure duct - AD	office building/second	doctor

The interface also includes a top navigation bar with 'Indoor Unit Management', 'Electricity Management', and 'System Configuration'. A status bar at the bottom shows 'Task: 0%', 'Progress: 0%', and 'Completed: No progress information'.

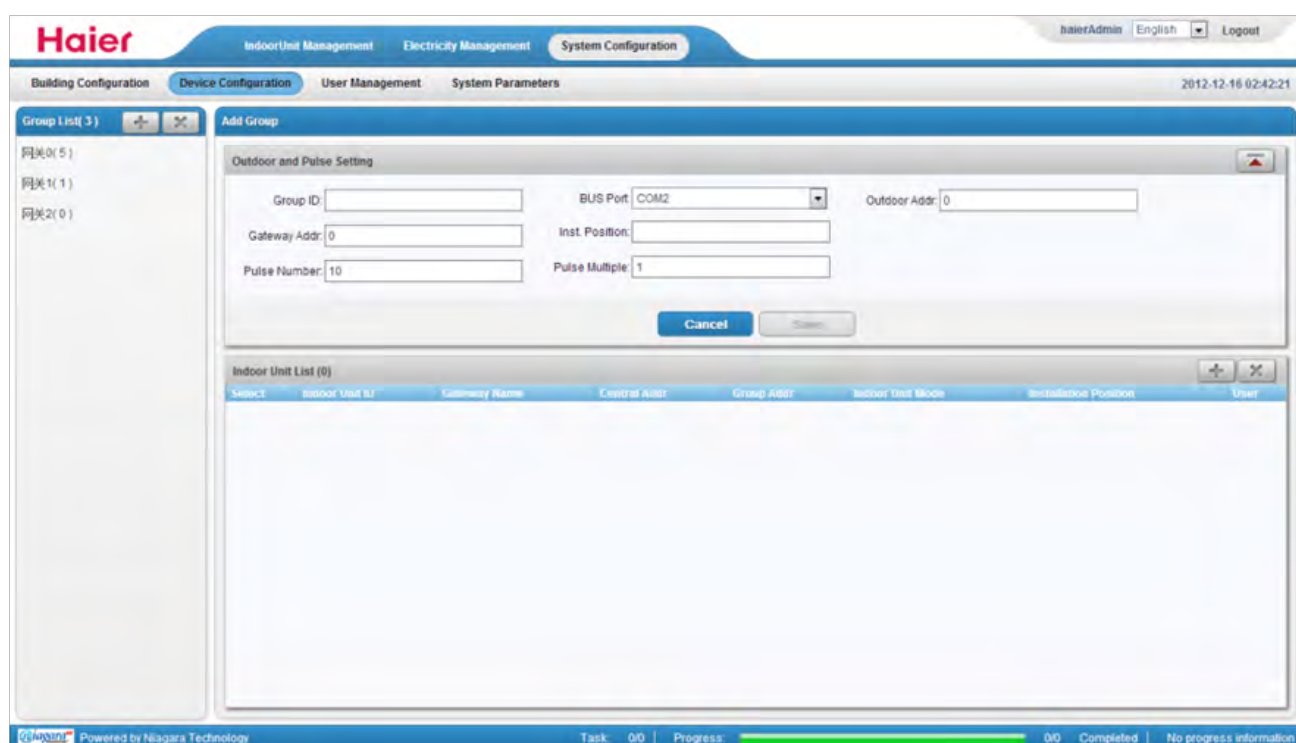
## Configure Groups

In this system, a group has below properties:

Property	Description
Group ID	An ID which is used to identify the group
Bus Port	The BUS port where the gateway is connected to the system, default is COM2
Gateway Addr	DIP address of IGU02 gateway, which ranges from 0 to 31
Outdoor Addr	Address of outdoor unit, which defaults is 0
Inst. Position	The position where the outdoor unit is installed
Pulse Number	Pulse number of electric meter
Pulse Multiple	Pulse multiple of electric meter

### Perform following steps to add a group:

1. Click + sign in Group List.
2. In "Outdoor and Pulse Setting" section under "Add Group" page, type a group name in "Group ID" field.
3. Select a bus port to use from the "BUS Port" dropdown list.
4. Input an outdoor address in "Outdoor Addr", default is 0.
5. Input a gateway address in "Gateway Addr".
6. Type the install position of the outdoor unit in "Inst. Position" field.
7. Input a multiple of 10 in "Pulse Number" field.
8. Input a number in "Pulse Multiple" field.
9. Click "Save" button.



## Configuring Indoor Units

A group may have 40 indoor units at most. One HCM-05 supports up to 250 indoor units. In this system, an indoor unit has the following properties:

Property	Description
Unit ID	Indoor unit ID
Mode	Options are “Wall mounted – AS”, “Low static pressure duct – AD”, “Floor and ceiling – AC” and “Cassette – AB”.
Group Addr	This address is managed by the central controller, default is 0; if it is set to a number between 1 and 15, a pop up telling you cannot control but can monitor the indoor unit will appear, then you can only control indoor unit through the remote controller.
Central Addr	DIP address of indoor units, which is used to communicate with the gateway, central address ranges from 0 to 63.
Position	The position where the indoor unit is installed or the locality that indoor unit belongs to.
User	The end user of the indoor unit

### Perform following steps to add indoor units:

1. Click + sign in “Indoor Unit List”. Indoor Unit Property panel is opened on the right side.
2. Input an indoor unit name in “Unit ID” field.
3. Select an indoor unit model from “Mode” drop-down list.
4. Select the position where the indoor unit is installed from “Select” list of Position
5. "Central Addr" will be assigned a number by system; you can modify this number to another number between 0-63 which has not been used in system.
6. Input a group address in “Group Addr” field, default is 0.If it’s set to a number other than 0, you cannot control but can only monitor the indoor unit, and you have to control indoor unit through the remote controller of the air conditioner.
7. Type the name of indoor unit user in “User” field.
8. Click “Save” button to simply save the indoor unit or “Save and Continue” to add another indoor unit.

The screenshot displays the Haier indoor unit configuration interface. It features a navigation bar with 'Indoor Unit Management', 'Electricity Management', and 'System Configuration'. The main area is divided into three panels: 'Group List' on the left, 'Indoor Unit List' in the center, and 'Indoor Unit Property' on the right. The 'Indoor Unit List' table contains the following data:

Indoor Unit #	Gateway Name	Central Addr	Group Addr	Indoor Unit Mode	Installation Position	User
ID0	Gateway0	0	0	unassigned	EagleRunPlazaFloor5HoneywellWorkingArea	KPMG
ID1	Gateway0	1	0	unassigned	EagleRunPlazaFloor5HoneywellWorkingArea	KPMG
ID2	Gateway0	2	0	unassigned	EagleRunPlazaFloor5HoneywellWorkingArea	KPMG
ID3	Gateway0	3	0	unassigned	EagleRunPlazaFloor5HoneywellWorkingArea	KPMG
IndoorUnit4	Gateway0	4	0	unassigned	EagleRunPlazaFloor5HoneywellWorkingArea	KPMG

The 'Indoor Unit Property' panel on the right contains the following fields and controls:

- Unit ID:
- Mode:
- Position:
- Central Addr:
- Group Addr:
- User:

At the bottom of the property panel are three buttons: 'Cancel', 'Save', and 'Save and Continue'. The interface also shows a status bar at the bottom with 'Task: 0/0', 'Progress: 0/0', and 'Completed: No progress information'.



## Configuring Users

You need to configure users after configuring buildings and devices. There're three kinds of users in this system: system administrator, super building manager and building manager.

The following table lists these 3 user roles and their permissions to the system for reference:

1st level Menu	2nd Level Menu	3rd Level Menu	Description	Building Manager	Super Building Manager	System Administrator
<b>Indoor Unit Monitoring</b>						
Indoor unit Management	Monitor		Monitor the status of indoor unit	√	√	√
Indoor unit Management	Monitor		Monitor the room temperature	√	√	√
Indoor unit Management	Monitor		Monitor the working conditions of indoor unit	√	√	√
Indoor unit Management	Monitor		Check the payment of electricity fee	√	√	√
Indoor unit Management	Monitor		Set indoor unit(s)	√	√	√
Indoor unit Management	Monitor		Check and apply the schedule	√	√	√
Indoor unit Management	Alarm		Handling the indoor unit fault and alarm	√	√	√
<b>Schedule Management</b>						
Indoor unit Management	Schedule		View a schedule	√	√	√
Indoor unit Management	Schedule		Create/manage weekly and exception schedule		√	√
Indoor unit Management	Schedule		Assign a schedule		√	√
<b>Electricity Management</b>						
Electricity Management	Electricity Bill		View the electricity fee within the specified date range	√	√	√
Electricity Management	Electricity charge		Electricity recharge		√	√
<b>Building Configuration</b>						
System configuration	Building configuration		Configure building/floor/location			√
<b>Device Configuration</b>						
System configuration	Device configuration		Add/Edit a group			√
System configuration	Device configuration		Add/Edit an indoor unit			√
<b>User Management</b>						
System configuration	User management		Modify/Add/Delete user		√	√



System configuration	User management		Indoor unit assignment		√	√
System Parameters						
System configuration	System Parameters	Initialization	Initialization			√
System configuration	System Parameters	Electricity Setting	Set the parameters for electricity price			√
System configuration	System Parameters	System/Device Synchronize	System and device synchronization setting			√
System configuration	System Parameters	History Setting	History Setting			√
System configuration	System Parameters	BACnet Configuration	BACnet Configuration			√
System configuration	System Parameters	Facility/Device import/export	Import/export facility/device configurations			√
System configuration	System Parameters	History export	Export history			√
System configuration	System Parameters	Log Setup	Set the system log			√
System configuration	System Parameters	Alarm Setting	Alarm setting			√

**System Administrator** is a user come with the system, you cannot edit the account name and type of the system administrator, but you can modify the first name, last name, telephone and password, as shown below:

The screenshot displays the Haier System Configuration web interface. The top navigation bar includes 'Indoor Unit Management', 'Electricity Management', and 'System Configuration'. The 'System Configuration' section is active, with sub-menus for 'Building Configuration', 'Device Configuration', 'User Management', and 'System Parameters'. The 'User Management' sub-menu is selected, showing a 'User List' table and a 'Profile' editing form.

**User List Table:**

	Account Name	First Name	Last Name	Phone Number	User Type
<input type="checkbox"/>	haierAdmin				SystemAdmin

**Profile Form:**

- Account: haierAdmin (disabled)
- First Name:
- Last Name:
- Phone Number:
- Type: SystemAdmin (dropdown menu)
- Password:
- Password Confirm:

Buttons: Cancel, Save

Footer: Powered by Niagara Technology | Task: 00 | Progress: 00 Completed | No progress information

System Administrator may add super building manager and building manager, and may also assign indoor units to building manager.

Perform the following steps to add a super building manager:

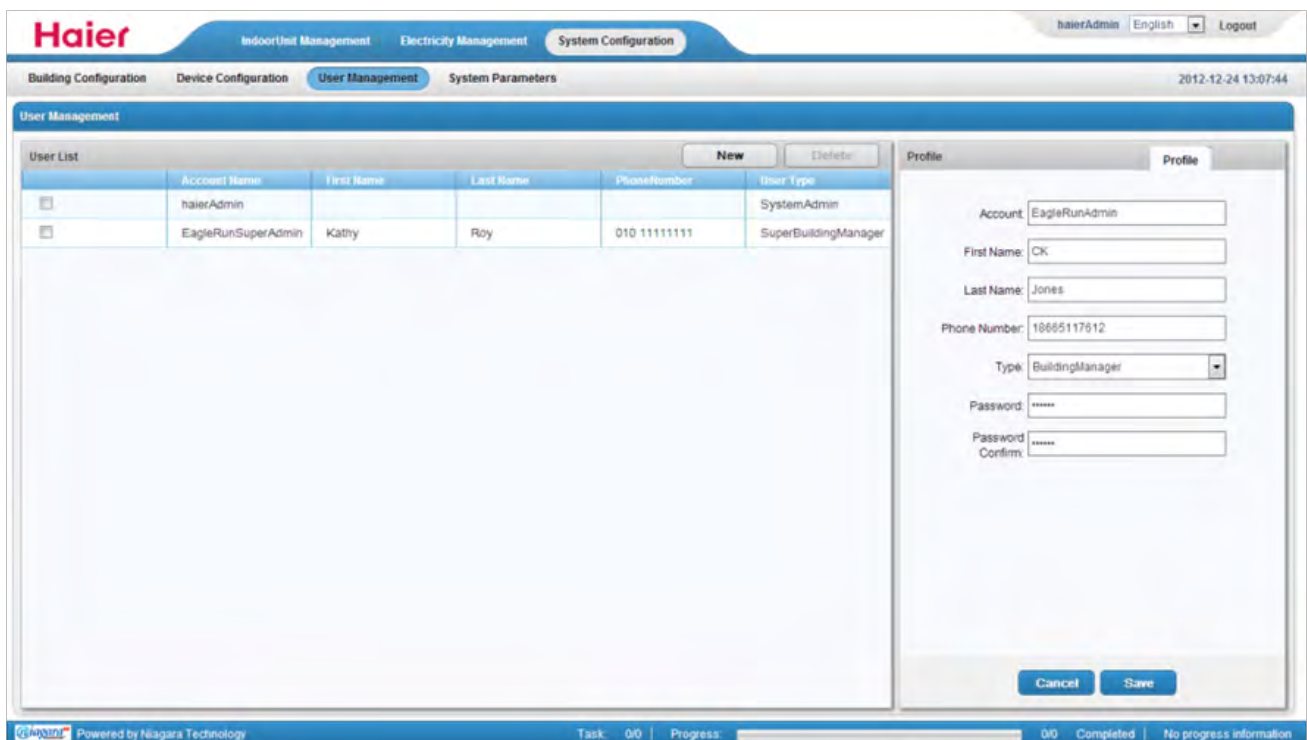
1. Click “System Configuration” > “User Management”.
2. Click “New” button at the upper right corner of user list.  
“Profile” panel will be opened on the right side.
3. Type the new account name in “Account” field.
4. Type the first name of the new account in “First Name” field.
5. Type the last name of the new account in “Last Name” field.
6. Input the telephone number of the new account in “Telephone” field.
7. Select “Super Building Manager” from the “Type” drop-down list.
8. Input the password for the new account in “Password” field.
9. Input the password for the new account once again in “Password Confirm” field.
10. Click “Save” button to save the new account or “Cancel” button to cancel adding a new account.

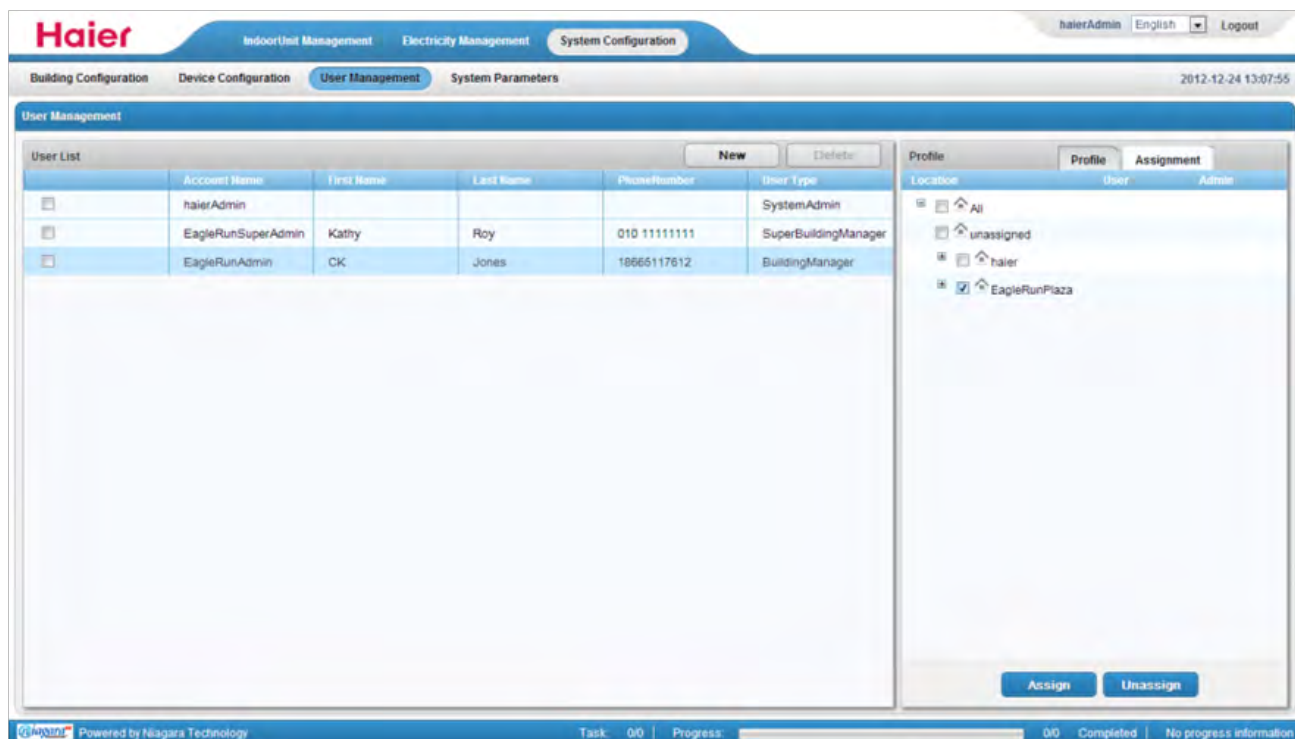
The screenshot displays the Haier User Management interface. At the top, there are navigation tabs for 'IndoorUnit Management', 'Electricity Management', and 'System Configuration'. The 'System Configuration' tab is active, and within it, 'User Management' is selected. The interface shows a 'User List' table with columns for Account Name, First Name, Last Name, Phone Number, and User Type. Two users are listed: 'haierAdmin' (SystemAdmin) and 'EagleRunSuperAdmin' (SuperBuildingManager). To the right of the table is a 'Profile' form with fields for Account, First Name, Last Name, Phone Number, Type (a dropdown menu), Password, and Password Confirm. The 'New' button is visible above the table, and 'Cancel' and 'Save' buttons are at the bottom of the profile form.

	Account Name	First Name	Last Name	Phone Number	User Type
<input type="checkbox"/>	haierAdmin				SystemAdmin
<input type="checkbox"/>	EagleRunSuperAdmin	Kathy	Roy	010 11111111	SuperBuildingManager

Perform the following steps to add a building manager and assign indoor units to that building manager:

1. Click “System Configuration” > “User Management”.
2. Click “New” button at the upper right corner of user list.  
“Profile” panel will be opened on the right side.
3. Type the new account name in “Account” field.
4. Type the first name of the new account in “First Name” field.
5. Type the last name of the new account in “Last Name” field.
6. Input the telephone number of the new account in “Telephone” field.
7. Select “Building Manager” from the “Type” drop-down list.
8. Input the password for the new account in “Password” field.
9. Input the password for the new account once again in “Password Confirm” field.
10. Click “Save” button to save the new account.
11. Select the indoor units to assign to this building manager in the “Assignment” tab opened on save.
12. Click “Assign” button to save indoor units assigned to the building manager or click “Unassign” button to cancel the assignment.





Super building manager can also add super building manager and building manager, and assign indoor units to building manager, the steps are the same as above.

Building manager has no permission to add a user, but only can monitor and view the indoor units assigned to him/her in "Monitoring" and "Alarm" under "Indoor Unit Management".

To delete a user, please:

1. Click "System Configuration" > "User Management".
2. Select the account name to delete by selecting its checkbox.
3. Click "Delete" button on the upper right corner of user list.

To modify a user, please:

1. Click "System Configuration" > "User Management".
2. Select the account name to modify by selecting its checkbox.
3. Make modifications in the user information opened.
4. Click "Save" button.

## Configuring System Parameters

Next, you need to configure the system parameters which include “Initialization”, “Electricity Setting”, “System/Device Synchronize”, “History Setting”, “BACnet Configuration”, “Facility/Device Import/Export”, “Log Setup” and “Alarm Setting” sections.

### Initialization

Initialization section provides time synchronization and connection setting features.

You may go to this page by clicking “System Configuration” > “System Parameters” > “Initialization”.

### Time Synchronization

When the system is online first time, you should synchronize the computer time and device time.

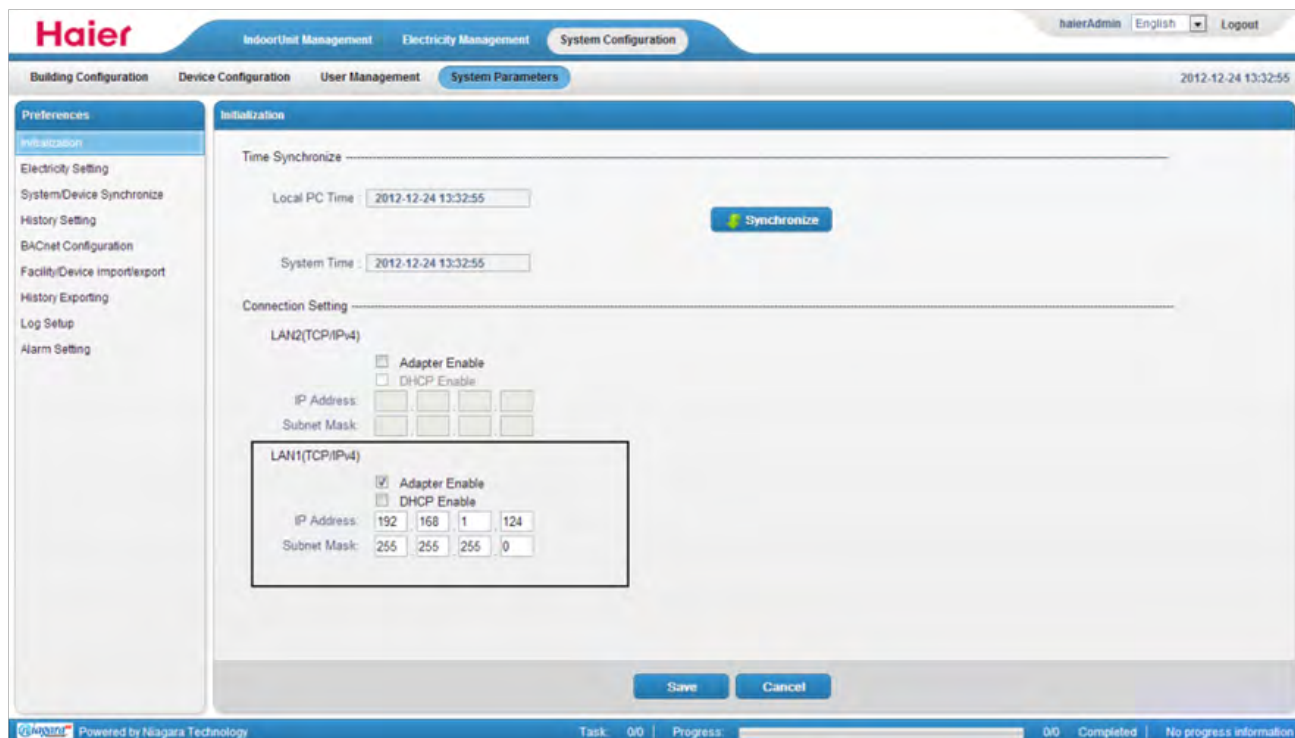
Perform the following steps to synchronize the time:

1. Click “System Configuration” > “System Parameters” > “Initialization”.
2. Click “Synchronize” button.

## Connection Setting

VRF system provides 2 LAN ports, LAN1 and LAN2. The factory-default IP address for device on first access is set on LAN1.

It's suggested to always assign fixed IP address to LAN1.



Note:

1. Enable DHCP only after one LAN is set a fixed IP address, or the system will not find the IP address obtained automatically;
2. The specified IP address effects only after HCM-05 controller is rebooted automatically;
3. Two LAN ports are better not set to the same network segment, because LAN2 is generally used for BACnet communication network;

If the device connects to the LAN only but will not connect to a BACnet network, then you need to use an Ethernet cable to connect directly from the computer to the device, and in "Initialization" section:

A. Set fixed IP address:

1. Keep all settings of LAN1 as is.
2. Select "Adapter Enable" checkbox in LAN2 section.
3. Input a fixed IP address and subnet mask in LAN2. The IP address of LAN2 should be set to a different network segment from the one that LAN1 is set to.
4. Click "Save" button.
5. Reboot the system.

B. Obtain the IP address automatically:

1. Keep all settings of LAN1 as is.



2. Select “Adapter Enable” checkbox in LAN2 section.
3. Select “DHCP Enable” checkbox in LAN2 section.
4. Click “Save” button.
5. Reboot the system.

Note: Only LAN2 needs to be connected when using the system after configuration, LAN1 should be idle and does not connect any cable.

If the device connects both to the LAN and to a BACnet network, you need to use one Ethernet cable to connect directly from the computer to the device’s LAN1 port, and also use another Ethernet cable to connect from the device’s LAN2 port to the BACnet network, and then in “Initialization” section:

**A. Set fixed IP address:**

1. Input a fixed LAN IP address and subnet mask in LAN1.
2. Select “Adapter Enable” in LAN2.
3. Input a fixed BACnet IP address and subnet mask in LAN2.
4. Click “Save” button.
5. Reboot the system.

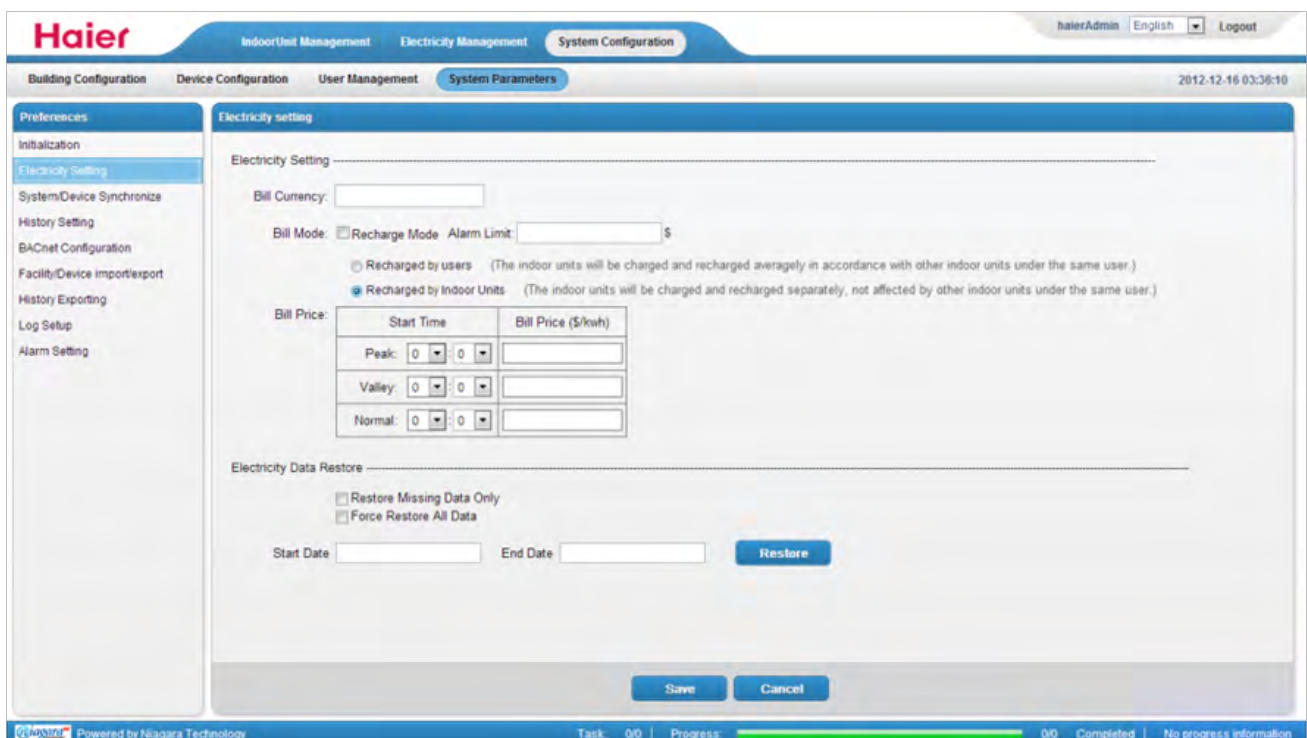
**B. Obtain IP address automatically:**

1. Input a fixed LAN IP address and subnet mask in LAN1.
2. Select “Adapter Enable” checkbox in LAN2.
3. Select “DHCP Enable” checkbox in LAN2.
4. Click “Save” button.
5. Reboot the system.

Note: LAN1 and LAN2 should be connected all the time when using the system after configuration.

## Electricity Setting

You need to configure the bill currency, bill mode, alarm limit and bill price in “Electricity Setting” section.



Perform the following steps to set postpaid electricity bill:

1. Type the currency of electricity bill to use in “Bill Currency” field.
2. Set the start time of peak price, and input the peak price.
3. Set the start time of valley price, and input the valley price.
4. Set the start time of normal price, and input the normal price.
5. Click “Save” button.

Perform the following steps to set recharge mode of electricity:

1. Type the currency of electricity bill in “Bill Currency” field.
2. Check the “Recharge Mode” box in Bill Mode.
3. Input a limit in “Alarm Limit” field. Once the electricity fee is lower than the specified limit, the system will warn the user to recharge for indoor units.
4. Select “Recharged by users” or “Recharged by Indoor Units”.
5. Set the start time of peak price, and input the peak price.
6. Set the start time of valley price, and input the valley price.
7. Set the start time of normal price, and input the normal price.
8. Click “Save” button.

If the generated electricity bill mismatches the readings of electric meter apparently, please check the history records first, if electricity records for someday is missing, you may restore the electricity data to find the lost data.



To restore the data of electricity fee, please:

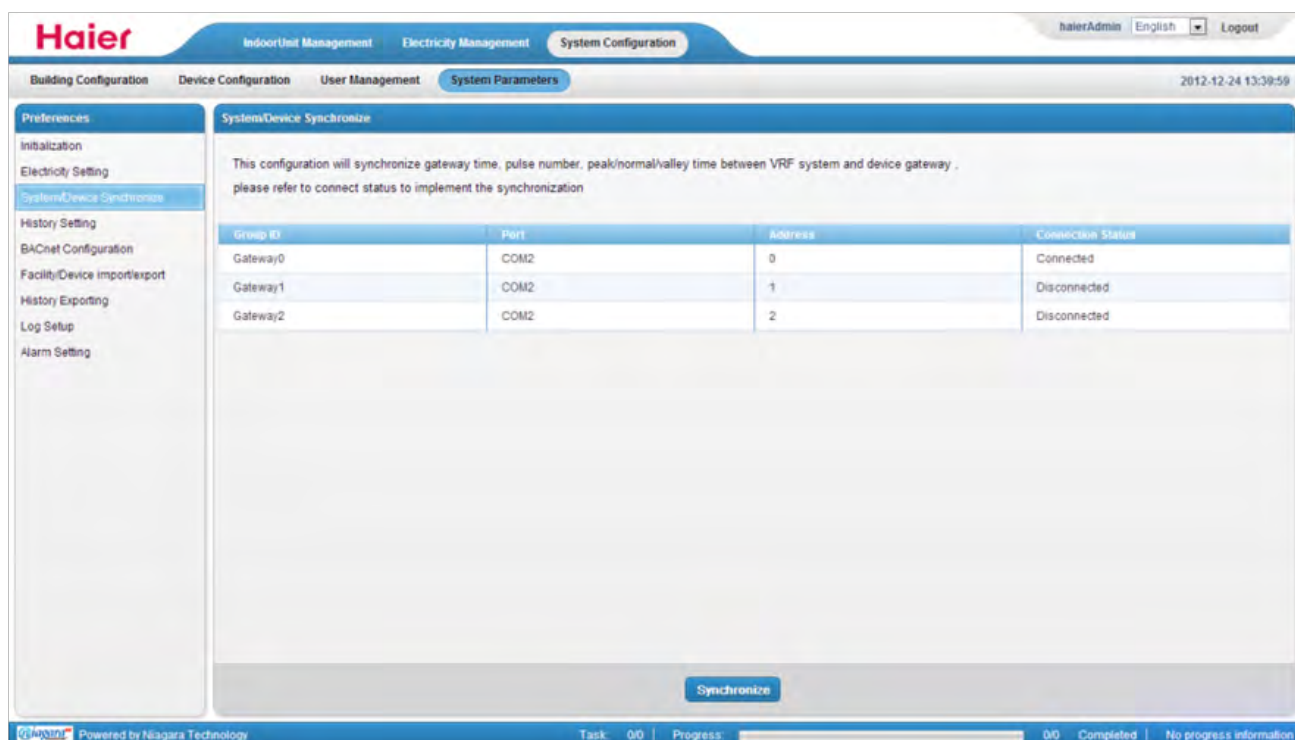
1. Select “Restore Missing Data Only” or “Force Restore All Data”.
2. Select the start date and end date.
3. Click “Restore” button.

## System/Device Synchronize

“System/Device Synchronize” section is used for synchronizing the gateway time, pulse number and peak / valley /normal time between VRF system and device, in which lists the “Group ID” created, “Port” used by groups, configured gateway “Address” and its “Connection Status” with device.

Note: The system can calculate consumption and electricity fee correctly only when the system is synchronized with device.

To write the group’s pulse number, gateway time and peak/valley/normal time to device, please make sure that all groups are “Connected”, and then press the “Synchronize” button.



The screenshot shows the Haier System Configuration interface. The main content area is titled "System/Device Synchronize" and contains the following text: "This configuration will synchronize gateway time, pulse number, peak/normal/valley time between VRF system and device gateway . please refer to connect status to implement the synchronization". Below this text is a table with the following data:

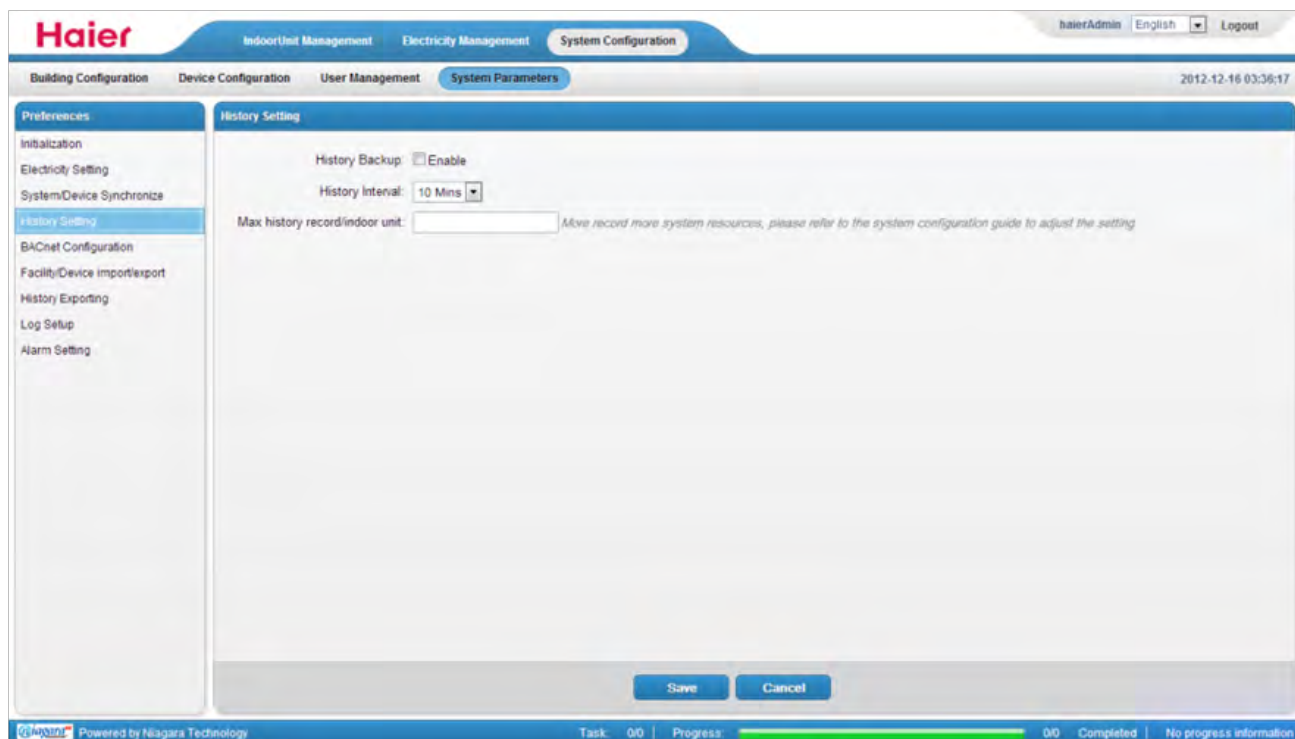
Group ID	Port	Address	Connection Status
Gateway0	COM2	0	Connected
Gateway1	COM2	1	Disconnected
Gateway2	COM2	2	Disconnected

At the bottom of the main content area, there is a "Synchronize" button. The footer of the interface shows "Task: 0/0 | Progress: 0/0 Completed | No progress information".

## History Setting

When you need to keep the system history, you may enable “History Backup” feature in “History Setting”, and then set the “History Interval” for backup and the maximum records keep for each indoor unit. Exported history contains health history and electricity fee history of indoor units.

Note: that the system will only keep the specified maximum records for history, hence, when the number of records exceeds this limit, the old history will be overwritten. Please export any required history records timely to store them in your computer.

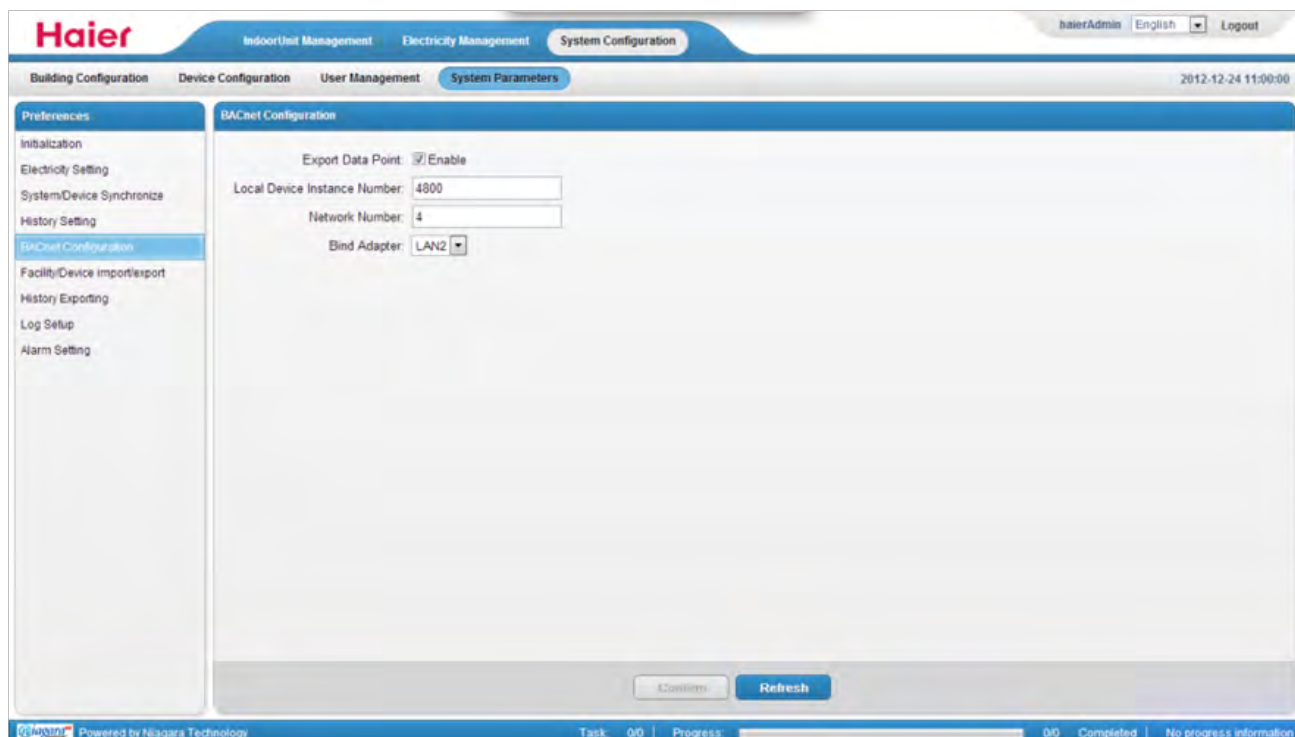


Perform the following steps to enable history backup and set history interval:

1. Click “System Configuration” > “System Parameters” > “History Setting”.
2. Select the history backup “Enable” checkbox.
3. Select a backup interval from the “History Interval” drop-down list. There are five options: 10 minutes, 15 minutes, 30 minutes, 45 minutes and 60 minutes.
4. Input an integer between 0 and 6000 to set the maximum history records per indoor unit. Please note that the more records to keep, the more system resources will be consumed.
5. Click “Save” button.

## BACnet Configuration

In “BACnet Configuration” section, you may export the properties of an indoor unit as BACnet points, so that the indoor unit can be incorporated into the BACnet network and be controlled by other BACnet devices. The properties of one indoor unit will be exported as 12 BACnet points.



To convert the properties of indoor units to BACnet points, please:

1. Select “Enable” checkbox next to Export Data Point.
2. Input a Local Device Instance Number.

When setting a local device instance number, be noted that this instance number should be unique in the BACnet network that the indoor unit will join in, and it must be an integer between 0 and 4194303.

3. Input a Network Number.

In network number, you need input the BACnet network number that the indoor unit will join in, and the network number must be an integer between 1 and 65535.

4. Select the adapter to bind from “Bind Adapter” drop-down list, default is LAN2.
5. Click the “Confirm” button.

Assuming the gateway address of an indoor unit is XX, and address of indoor unit is YY, and index of indoor unit is ZZ, then the BACnet points of that indoor unit exported by the system is:

BACnet point name	Source data point	BACnet point type	BACnet instance number
Indoor_OnOff_BO_XX_YY	On Status	BO	10000+ZZ
Indoor_OnOff_BI_XX_YY	On Status	BI	20000+ZZ
Indoor_WorkMode_MSO_XX_YY	Work Mode	MSO	50000+ZZ*3
Indoor_WorkMode_MSI_XX_YY	Work Mode	MSI	60000+ZZ*3
Indoor_WindSpeed_MSO_XX_YY	Wind Speed	MSO	50000+ZZ*3+1
Indoor_WindSpeed_MSI_XX_YY	Wind Speed	MSI	60000+ZZ*3+1
Indoor_ControlMode_MSO_XX_YY	Control Mode	MSO	50000+ZZ*3+2
Indoor_ControlMode_MSI_XX_YY	Control Mode	MSI	60000+ZZ*3+2
Indoor_SetPoint_AO_XX_YY	Set Point	AO	30000+ZZ
Indoor_SetPoint_AI_XX_YY	Set Point	AI	40000+ZZ*2
Indoor_RoomTemperature_AI_XX_YY	Room Temp	AI	40000+ZZ*2+1
Indoor_ErrorCode_AI_XX_YY	Fault Code	AV	70000+ZZ

The index of indoor units is determined by the gateway address of indoor unit and the order of indoor unit address. Under different gateway, indoor unit with low gateway address has the prior index. Under the same gateway, indoor unit with high gateway address has the prior index.

After adding or deleting indoor units, current indoor unit index may change.

## Facility/Device import/export

The template provided by the system enables you to configure buildings and devices in bulk, so this feature is very helpful when configuring similar buildings and devices.

Be cautious when you decide to use this feature, this is only recommended to be used by experienced engineers who is familiar to this VRF supervisor system perfectly.



### Warning

When importing the xml file with building/device configuration, buildings and devices that exists in system originally will be deleted. Once you fail to import the configuration, system configurations will be missing.

It's suggested always backup existing configurations in system to your local machine by pressing "Export Configuration" button before importing configuration XML file, to make sure you can return to the status before importing.

The screenshot displays the Haier VRF supervisor system web interface. The top navigation bar includes 'Indoor Unit Management', 'Electricity Management', and 'System Configuration'. The left sidebar lists various configuration options, with 'Facility/Device Import/Export' selected. The main content area is titled 'Facility/Device Import/Export' and contains the following elements:

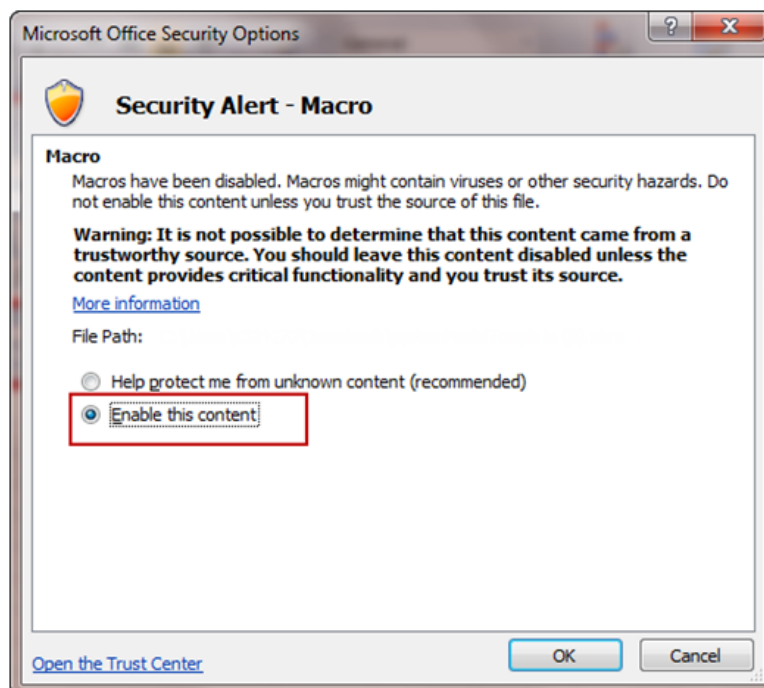
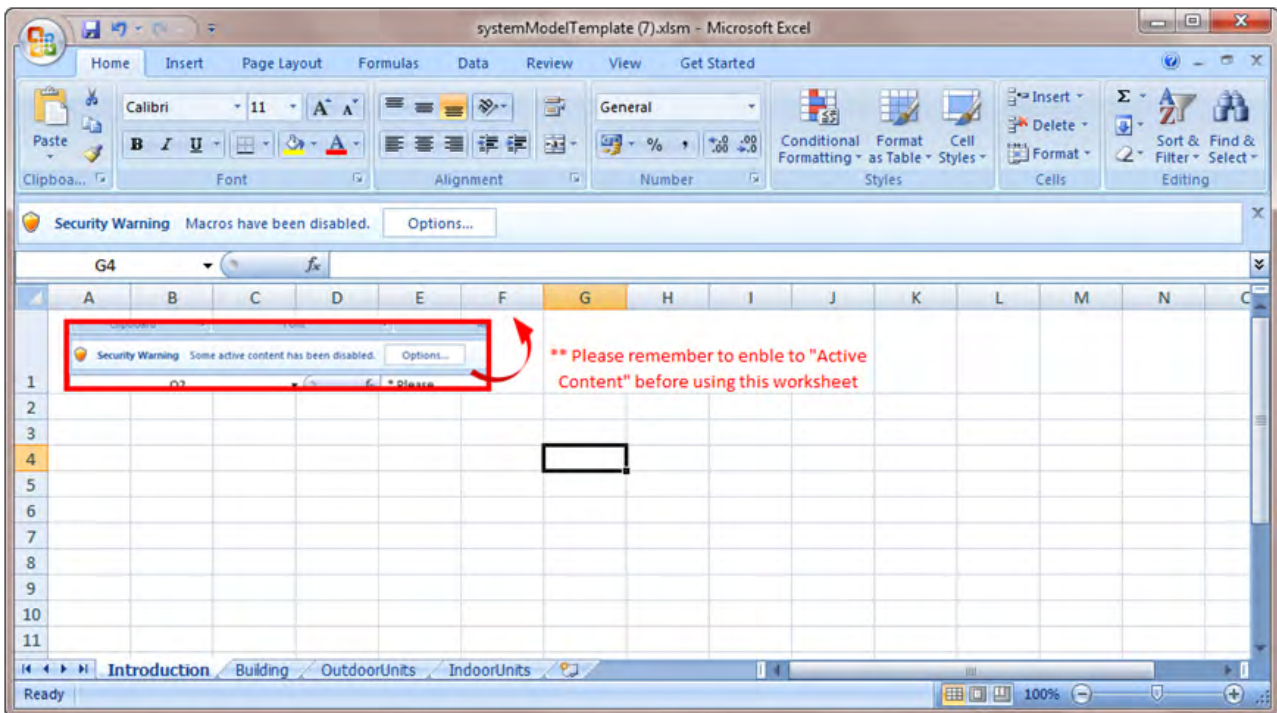
- Tips:**
  - IMPORT FACILITY & DEVICE CONFIGURATION PROCESS:**
    - Download Excel Template And Save Local.
    - Edit The Template On Facility And Device Configurations.
    - Click The 'Export' Button In Template To Export The Configurations To XML File And Save Local.
    - Click On 'Choose File' Button Below To Select The XML, And Click 'Import' Button To Import The Configurations To System.
  - EXPORT FACILITY & DEVICE CONFIGURATION PROCESS:**
    - Click 'Export' Button To Export Existing Facility And Device Configurations To XML.
    - Save XML At Local For Further Editing And Importing.
- Download Excel Templates:** A button with an Excel icon and a green 'X'.
- Export facility and device configuration file to new XML file:** A button with an XML icon and a green downward arrow.
- Import facility and device configuration file from existing XML file:** A button with an XML icon and a green upward arrow, accompanied by a 'Choose File' button.

The bottom status bar shows 'Task: 0/0 | Progress: 0/0 | Completed | No progress information'.

## Configuration Template

The configuration table contains 4 spreadsheets: Introduction, Building, Outdoor Units and Indoor Units, as shown in the following figures:

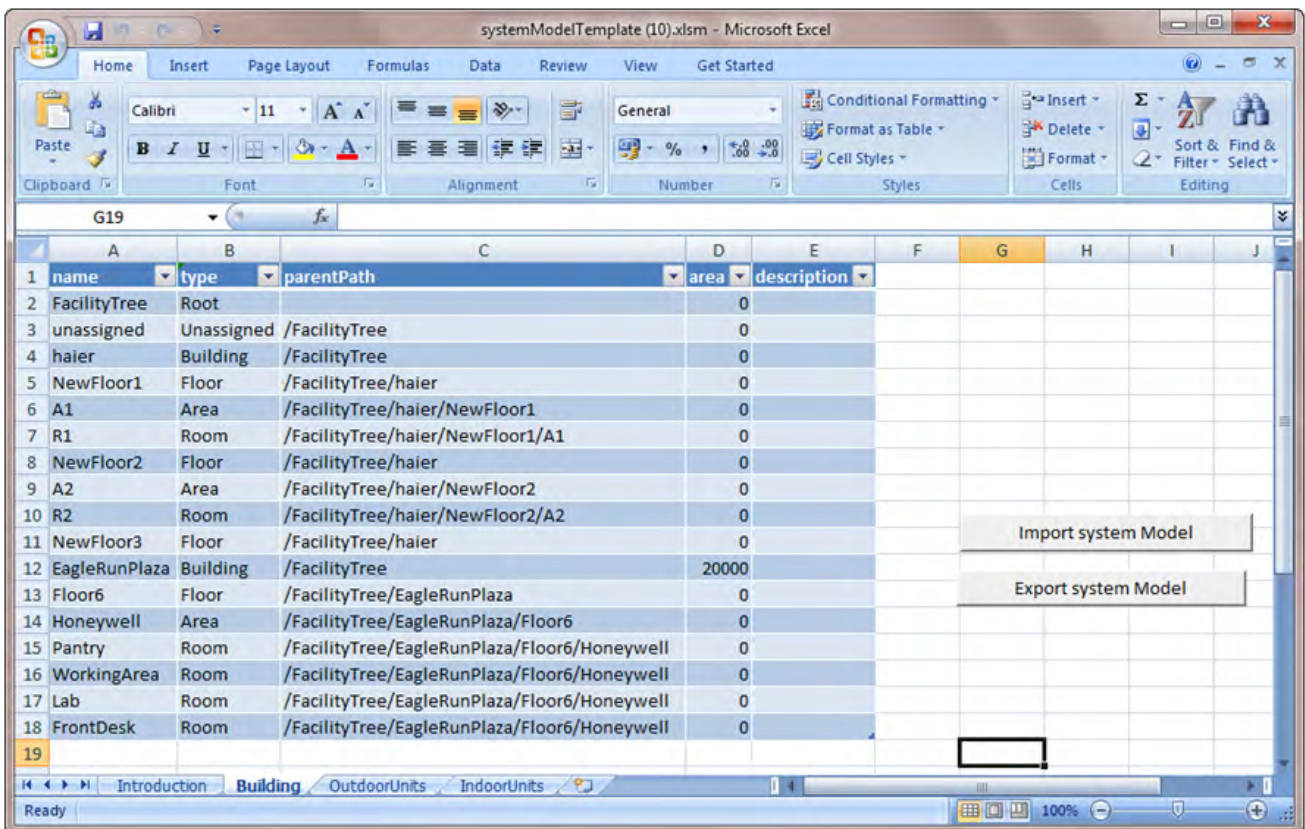
1. Introduction spreadsheet describes the notice of using template. You must click “Options” button and then click “Enable this content” to activate contents to use this template.





2. Buildings spreadsheet contains name, type, parent path, area and description columns.

Property	Description
Name	locality name
Type	Type has 6 options, "Root", "unassigned", "Building", "Floor", "Area" and "Room". Note: Do not delete Root and unassigned, or import will fail.
Parent path	The location that the new locality belongs to.
Area	The area value of the new locality
Description	Description of new locality



Building spreadsheet

3. Outdoor Units spreadsheet contains name, gateway Address, port, installed Location, pulse, and pulse Factor columns.

Property	Description
Name	Name of outdoor unit
gateway Address	Gateway address (which ranges from 0 to 31)
installed Location	Install localization of outdoor unit
Pulse	Pulse number
pulse Factor	Pulse multiple

	A	B	C	D	E	F	G	H
1	name	gatewayAddress	port	installedLocation	pulse	pulseFactor		
2	G0		0	COM2	AA	10	1	
3								
4								
5								
6								

Outdoor Units spreadsheet

4. Indoor Units spreadsheet includes the following properties:

Property	Description
Name	Name of indoor unit
Outdoor Unit Name	Name of outdoor unit
Central Address	Central address (which ranges from 0 to 63)
Internal Address	Internal address in group (which ranges from 0 to 15, this is the address managed by central controller, default is 0; if set to value other than 0, then the indoor unit can only be monitored but cannot be controlled, and you can control the indoor unit only through the remote controller.)
Installed Location	Install position of indoor unit Keep default “unassigned” will not set the install position of indoor unit To set the install position, be noted that install position should consist of the values in “name” and “parent Path” in Outdoor Units spreadsheet. For example, assuming name is “Working Area”, parent Path is “/FacilityTree/EagleRun Plaza/Floor6/Honeywell”, and then install position is “EagleRunPlaza/Floor6/Honeywell/Working Area”.
Model	Model of air conditioner
user	End user of the indoor unit

	A	B	C	D	E	F	G	H
1	name	outdoorUnitName	centralAddress	internalAddress	installedLocation	model	user	
2	ID0	Gateway0	0	0	EagleRunPlaza/Floor6/Honeywell/WorkingArea	Unassigned	KPMG	
3	ID1	Gateway0	1	0	EagleRunPlaza/Floor6/Honeywell/WorkingArea	Unassigned	KPMG	
4	ID2	Gateway0	2	0	EagleRunPlaza/Floor6/Honeywell/WorkingArea	Unassigned	KPMG	
5	ID3	Gateway0	3	0	EagleRunPlaza/Floor6/Honeywell/WorkingArea	Unassigned	KPMG	
6	IndoorUnit4	Gateway0	4	0	EagleRunPlaza/Floor6/Honeywell/WorkingArea	Unassigned	KPMG	
7	test2	Gateway1	2	0	haier	Wall mounted - AS	www	
8	aaa	Gateway2	0	1	unassigned	Unassigned	qq	

Perform the following steps to configure buildings and devices in bulk:

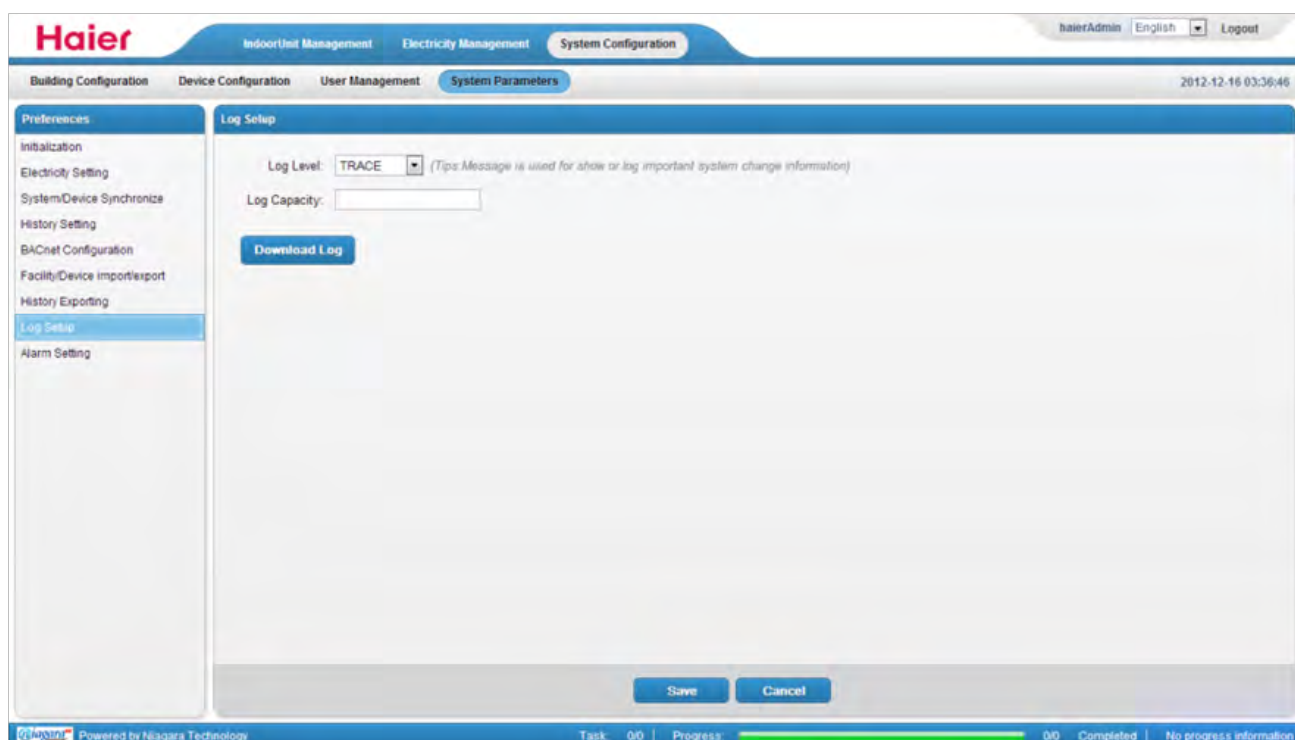
1. Click “System Configuration” > “System Parameters” > “Facility/Device Import/Export”.
2. Click “Download Excel Template” to get systemModelTemplate.xlsx file.
3. Click “Export Configuration” next to “Download Excel Template” to get systemModelConfig.xml file.
4. Locate and open systemModelTemplate.xlsx file.
5. Click “Import system model” to import systemModelConfig.xml file.
6. Edit the configuration of buildings and devices in the template.
7. Click “Export System Model” button in template to export configurations to an XML file and save it locally.
8. Click “Choose File” button to select the XML saved in last step and click “Import Configuration” button to import the configurations from xml file to system.

Perform the following steps to export building and device configurations:

1. Click “Export Configuration” button to export existing facility and device configurations to XML file.
2. Save this XML file at a location in your machine for further use.

## Log Setup

You can configure system log in “Log Setup” section.



There're two log levels “Message” and “Trace” in the system, where “Message” is used to show or log important system changes; “Trace” is used for debugging.

Perform the following steps to set system log:

1. Select a desired log level.
2. Input an integer between 500 and 25000 in the “Log Capacity” field to set the records of log that the system will keep.

Note: the system will only keep the specified number of logs; old logs will be overwritten once the number of logs exceeds the number specified in “Log Capacity” field.

3. Click “Save” button.

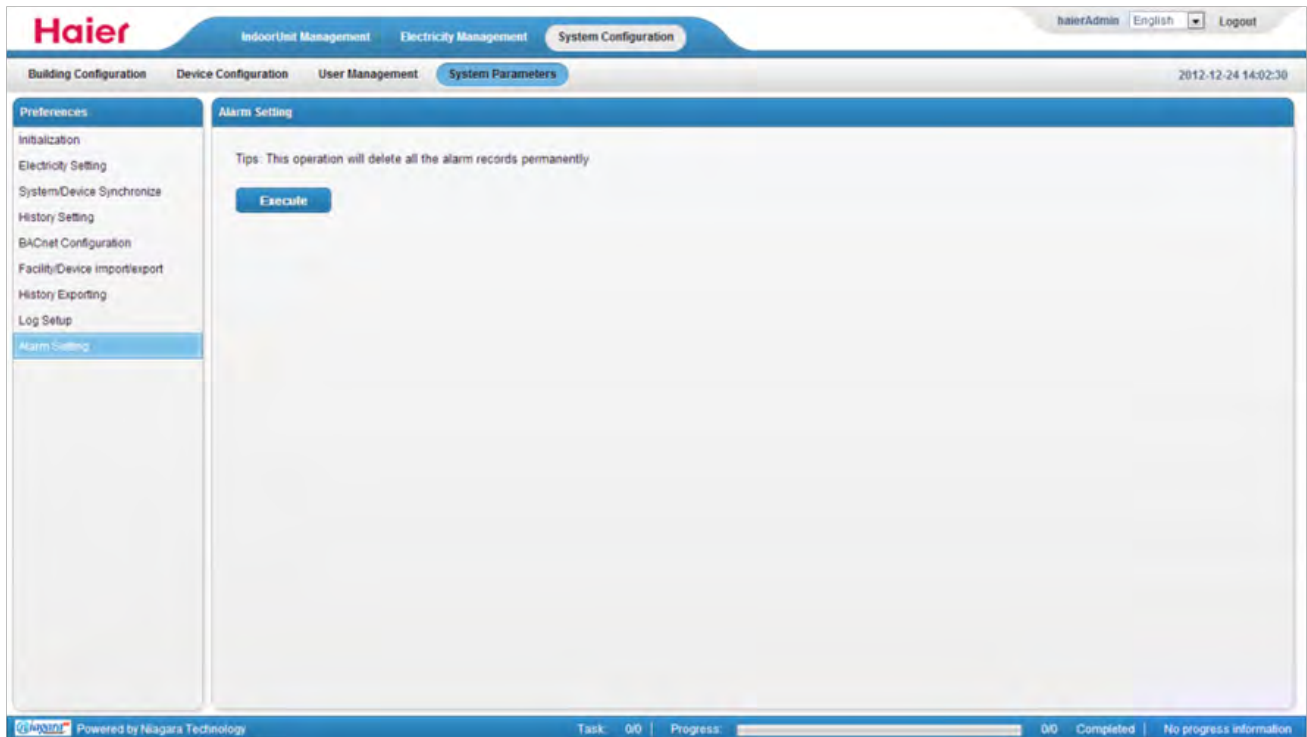
To check system logs, click “Download Log” button to download logs to your computer.



## Alarm Setting

In “Alarm Setting” section, you can delete all alarms in the system. Perform this deletion only when you’re the system administrator and have finished system configuration before handing over the system to the customer.

Be cautious on deletion because this cannot be reverted.



Perform the following steps to delete all alarms in the system:

1. Click “Execute” button.
2. Click “OK” to confirm the deletion.

## 5.5 HCM-01



## Package component

No.	Name	Quantity	Picture
1	Software CD-ROM	1	
2	RS485 to RS232 converter	1	
3	USB2.0 to RS232 converter	2	
4	Power adapter	1	
5	Line terminal	1	
6	Serial line extension	1	
7	USB driver	2	

## Specification

Model	HCM-01
Band	haier
Dimension (mm)	250*150*50
Net weight	1kg
Power supply	220V AC,50/60Hz
Gate way	IGU-02
Max. connection quantity of gateways	32
Max. connection quantity of indoor units	400
Operating temperature range	0°C ~45°C
Operating humidity range	10%-85%

### Brief

BMS system H-CACSII transfer the data of air conditioner to the computer through the inverter protocol adapter (IGU02), and the user can monitor the working state and the power consumption of indoor and outdoor on real time at the computer. Set the parameter of system in time; start or stop a certain indoor individually, or in group as the request; receive the alarm and make some measures on real time; deal with the data and make some cost account tables.

### System combination

1. Inverter protocol adapter (IGU02): Transform the air conditioner protocol into protocol 485; receive ammeter pulse signal; account and save the power cost of the connected system, then transfer it to the computer.
2. Software: parameter display and human-computer operation surface, and account and save the power cost, output the cost table.
3. RS 485&232 Converter (hardware),Item 2 & 3 name is HCM1.

### Control range

1. If the H-CACSII is necessary, pay attention that the indoor quantity of every system cannot be over 40 sets. Or the adapter can not work normally.
2. Every system needs one protocol adapter.
3. One Microsoft can control indoors within 400 sets.

Applicable for MRV system.

### Applicable range and relative certificate

1.Applicable range

Temp. range: -30OC~52OC

Ambient temperature of controller: -30OC~52OC

Ambient humidity of controller: 10%~85%

Save temp. range of controller: -30OC~52OC

Altitude: 0~6000m

Voltage: 220Vac±10%

Frequency: 50Hz

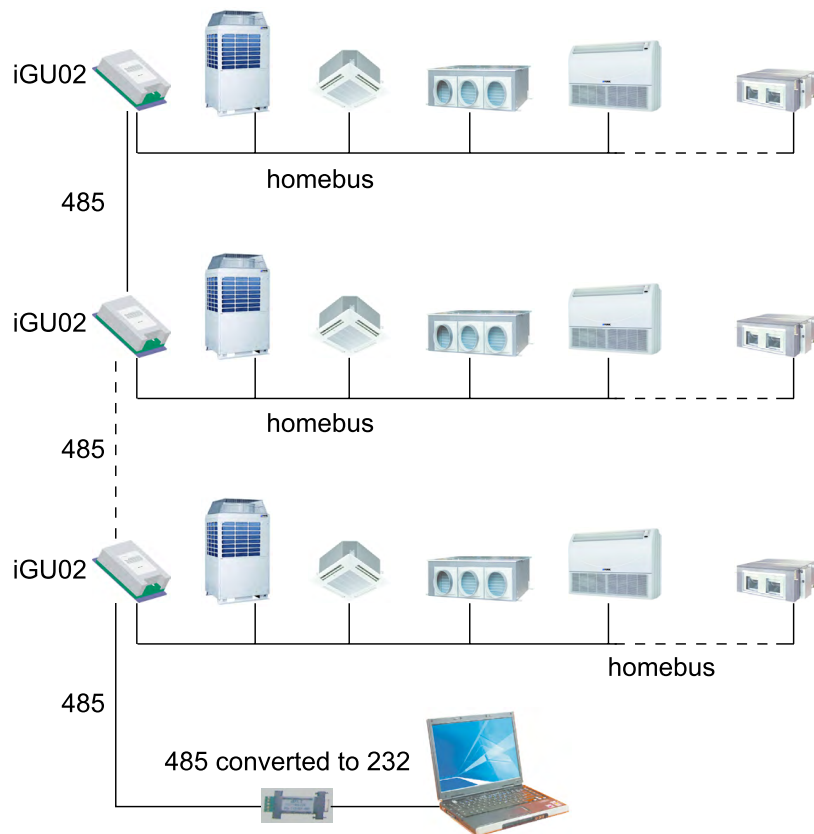
2.Safe certificate: Conform with HR and CC

3.Environment certificate: conform with ROH

### Reliable request

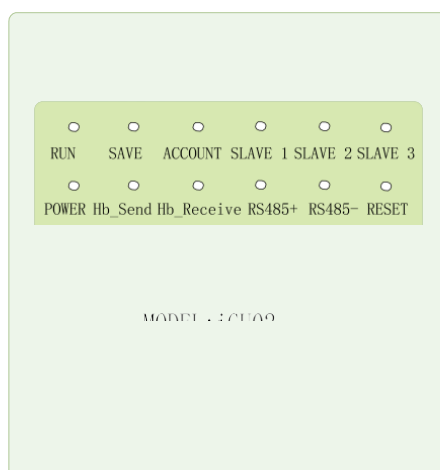
- 1.Application standards:QB1238-91, GB4706.1-92, GB4706.12-95
- 2.Special requirement

### Scheme of H-CACSI



### Appearance and dimension of protocol adapter

Appearance:



Dimension: 2000\*1300\*430(mm)

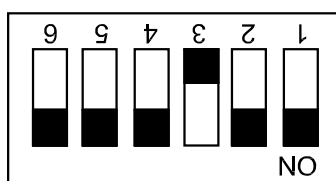
## Wiring request

1. Protocol adapter needs 220V AC power supply.
2. The communication line between indoor and outdoor and the bus line 485 among the protocol adapters should be through steel wire sleeve in the H-CACSII.
3. Set the indoor central address and the indoor/outdoor unit address by hand.
4. The system with H-CACSII should not set the group function of wired controller.

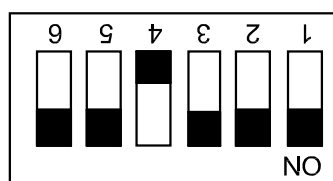
## Dip switch setting:

ON: 0; OFF: 1

Left 4

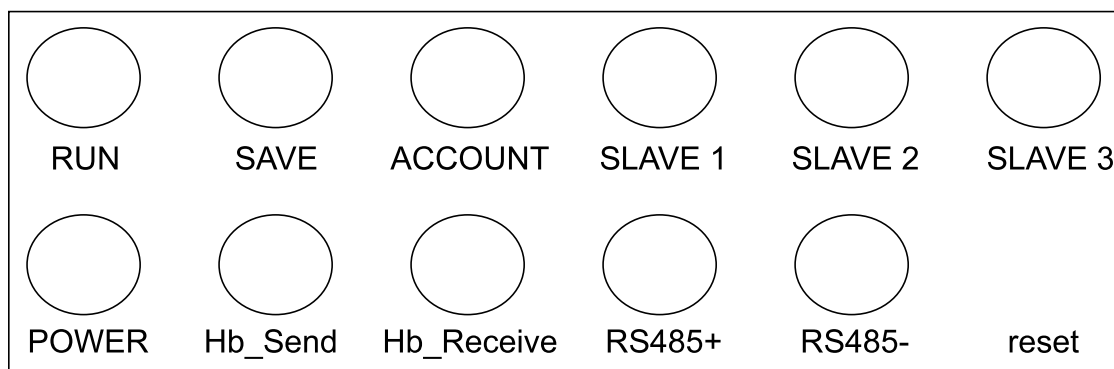


Right 8



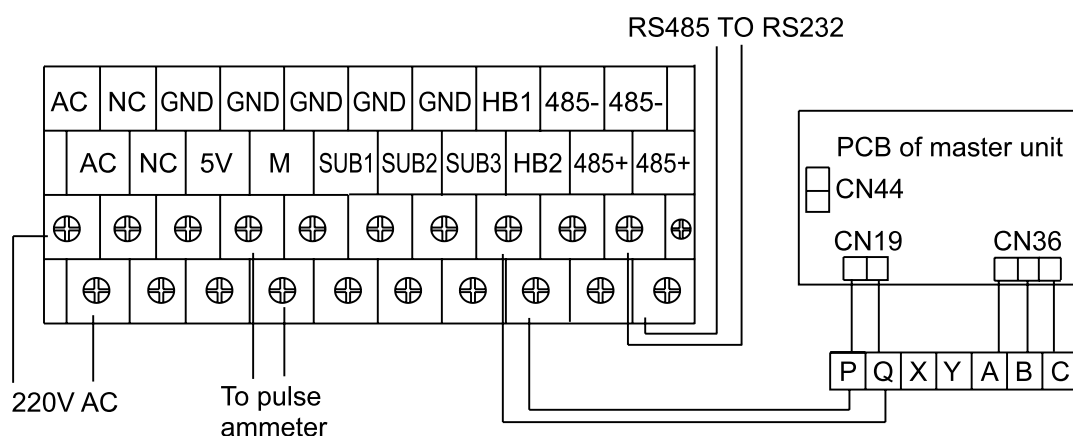
Shows address of IGU02, address range: 1-32.

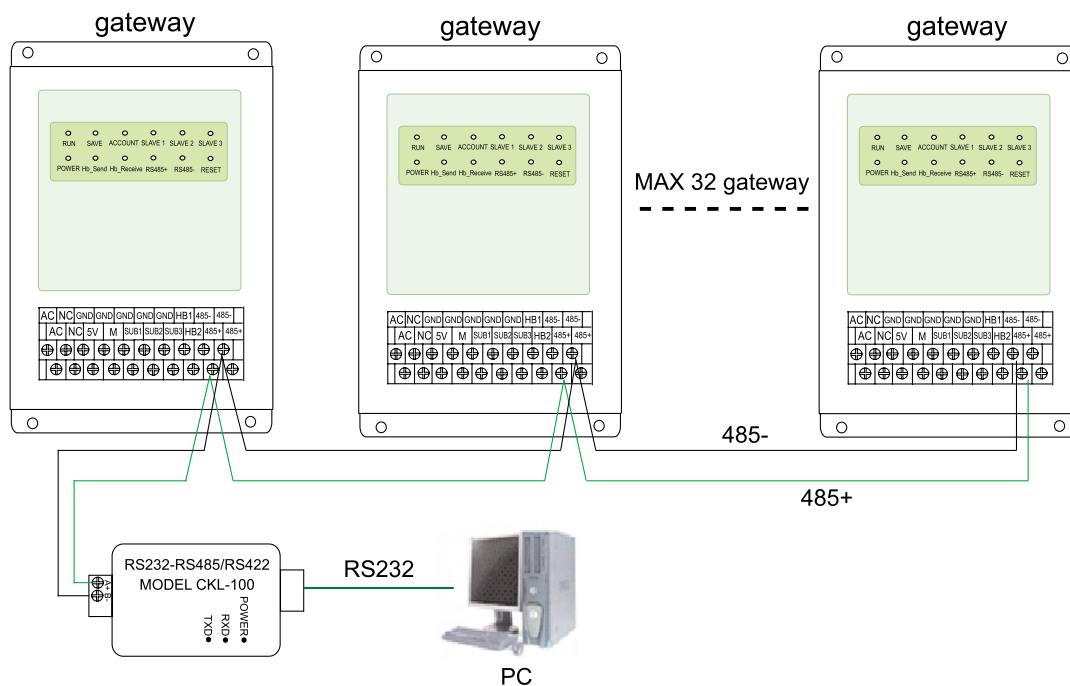
## Communication lamp definition



## Wiring request

Wiring terminal:





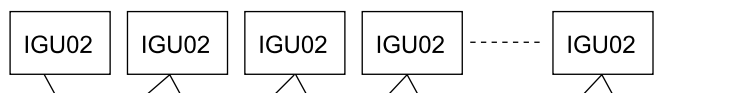
## Wiring request

Wirings:

1. Power supply wires: 220V AC, 50Hz.  
Use requested specifications and fix it.

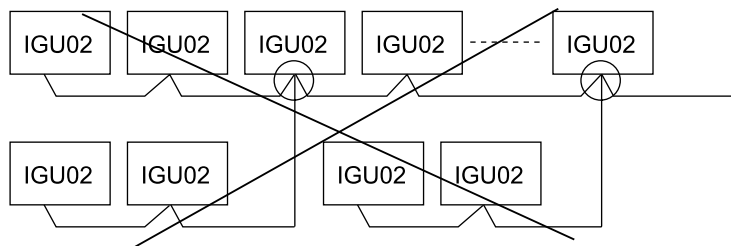
2. Communication wires:

Wires between IGU02 should use two polarity wires and loop connection.



Wirings:

The following connection (have interconnection) are not allowed:



Notes:

(1) Communication wires between IGU02 & IGU02 should use twin-core shielding wires and need to connect to the earth.

(2) Iron wire sleeve should be used when install the communication wires, and should separate from power wires;

(3) Communication wires have polarity request;

(4) Maximum total communication wires length is 500m.

3. Maximum 40 sets indoor units should be used in Each outdoor system;

4. Central controller ICR01 can't be used when use IGU02;

5. When use IGU02, indoor units address should be set manually, and indoor units address setting should from No.0 to the last one in each set outdoor unit system, and indoor & outdoor address (sw03) and central address (sw02) of same indoor unit should be keep the same. If use one wired controller YR-E12 control many indoor units, central address of slave units wired controller also should be set the same as that of indoor & outdoor address (SW03), thus indoor units address can be saw from software.

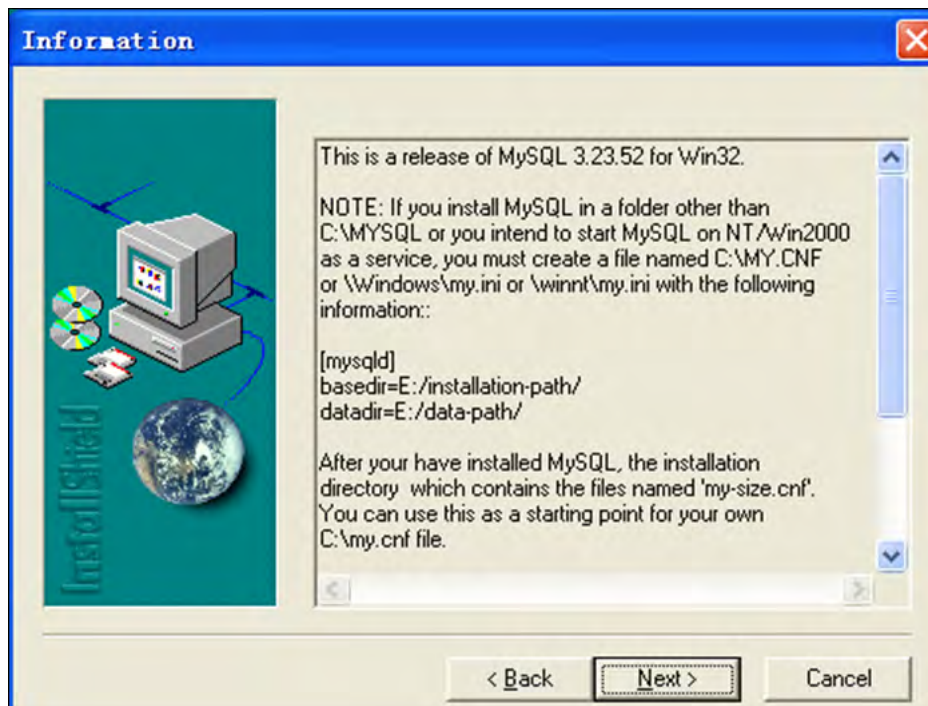
## Install the software

### 1. Install database

Firstly install Mysql Database,



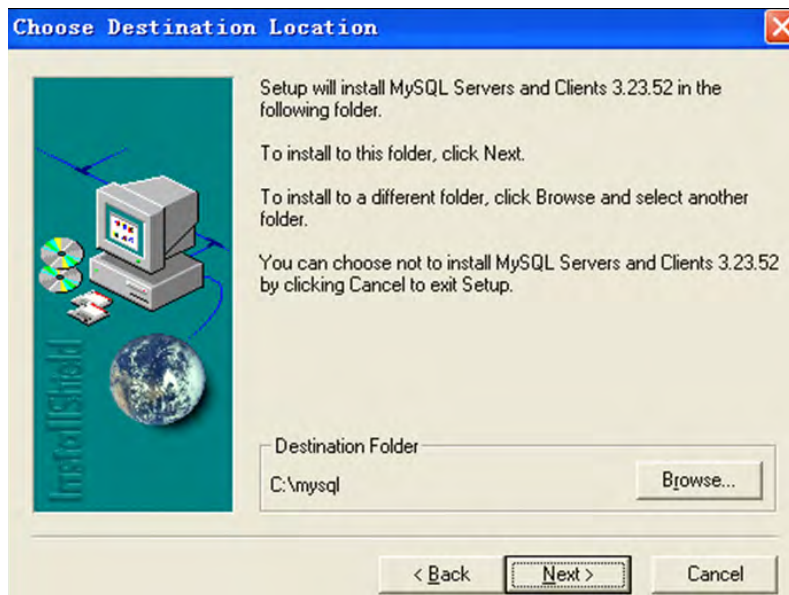
Next



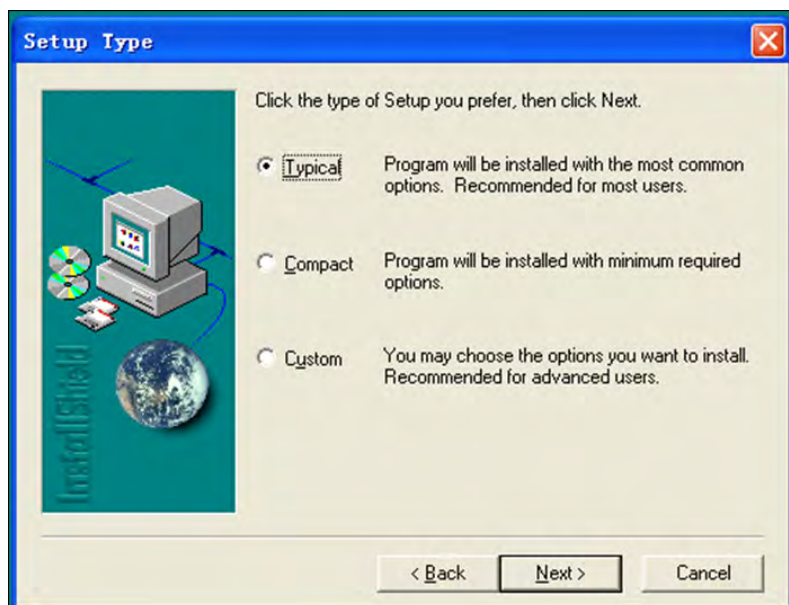
Next



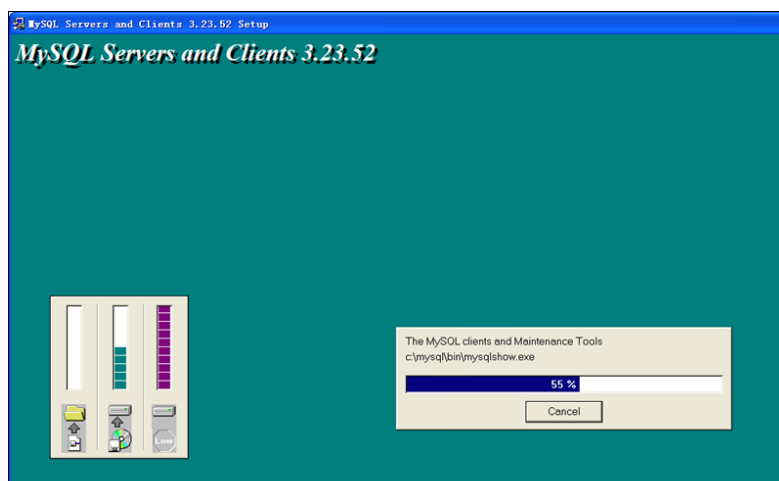
## Install the software



Next



Next



## Install the software

Then click "Finish", installation succeeds.

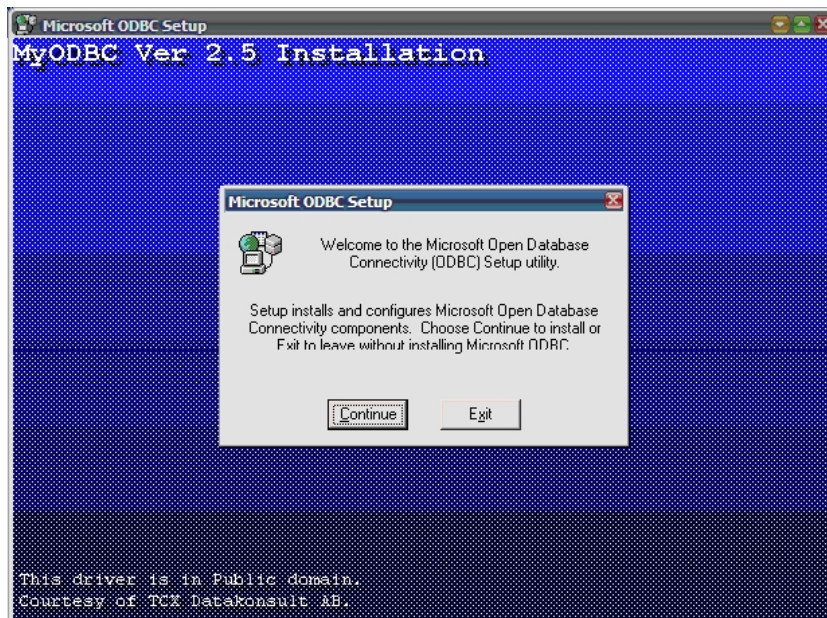


Note:

No need to change the default setting, just click \*next\* all the way.

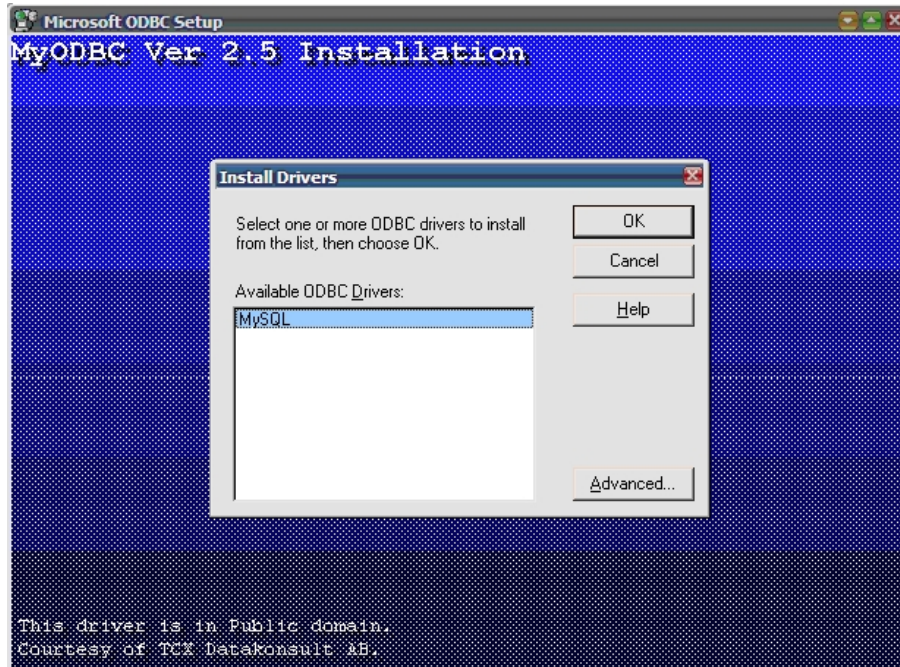
## 2.ODBC installation and setting

ODBC installation:

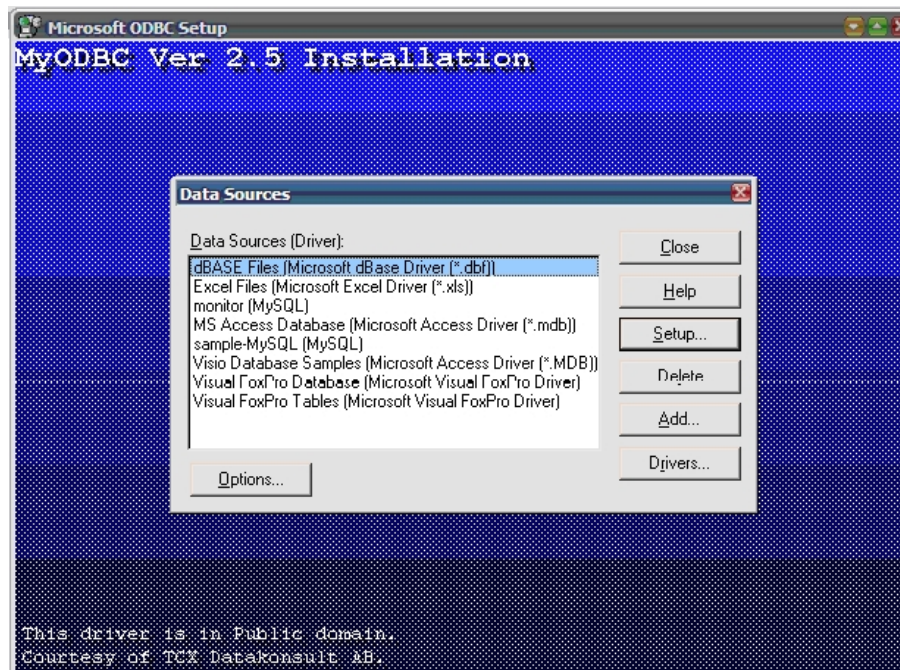


Continue

## Install the software



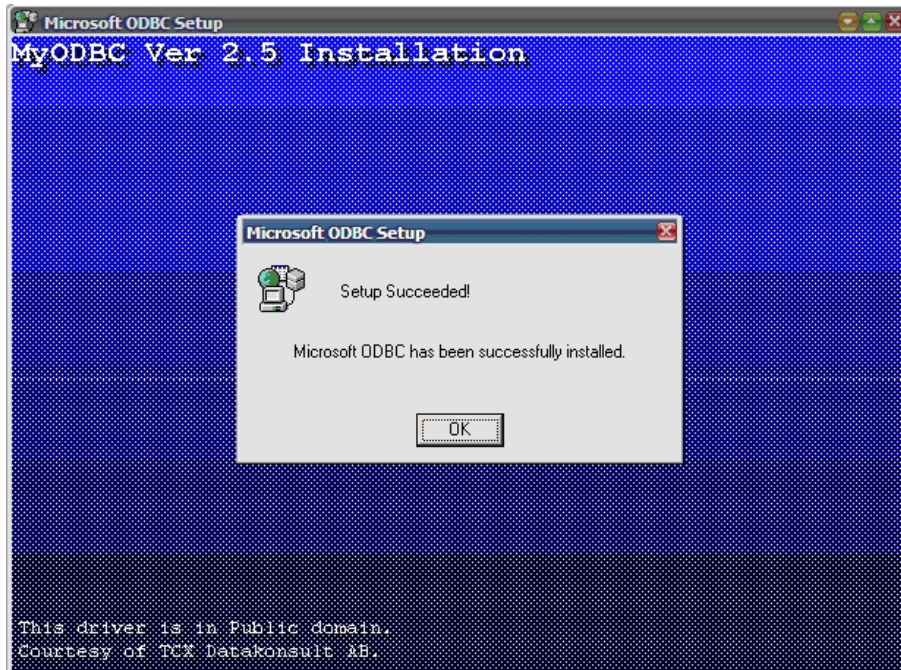
Select mysql, then click "ok"



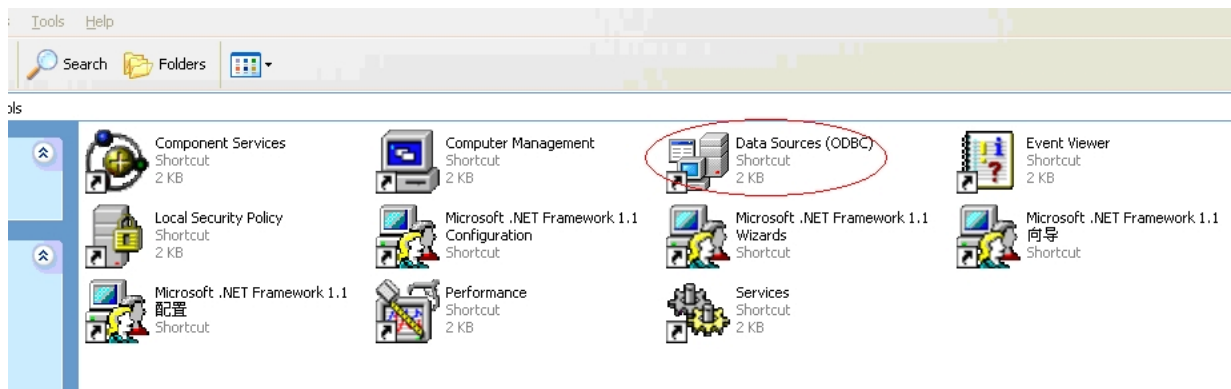
Then click "close"



## Install the software

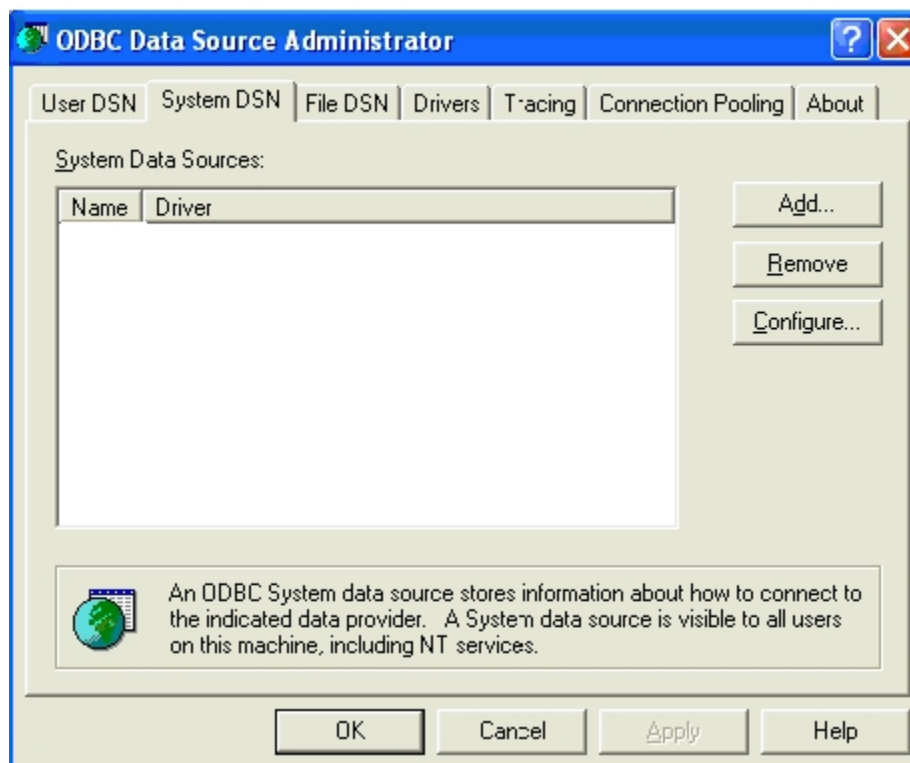
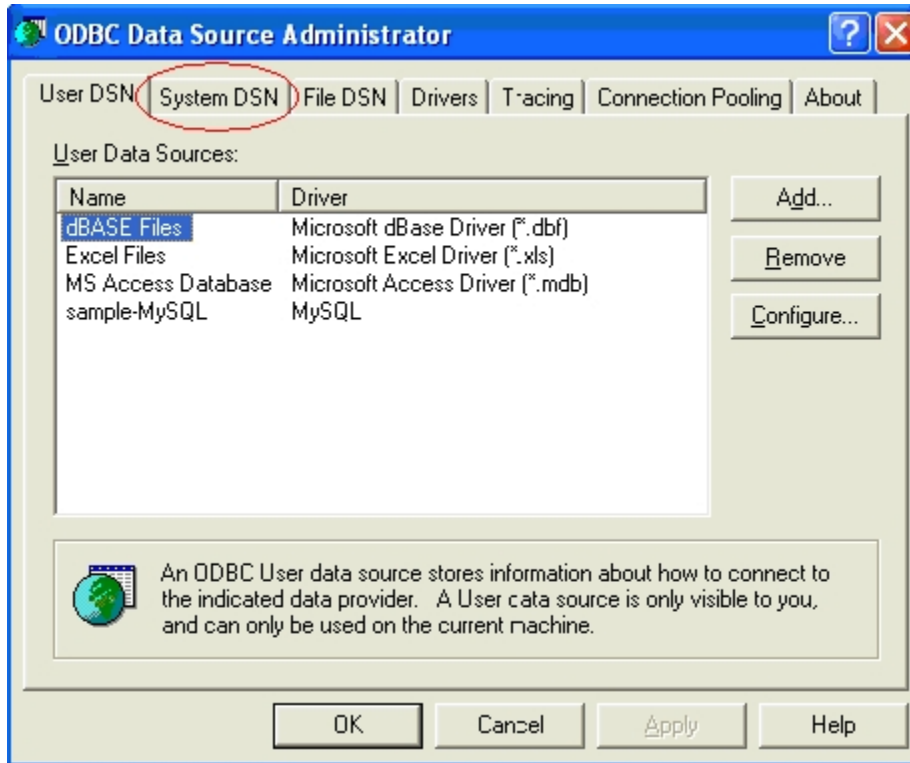


ODBC setting:  
Open ODBC database in the route : control panel/manage tool



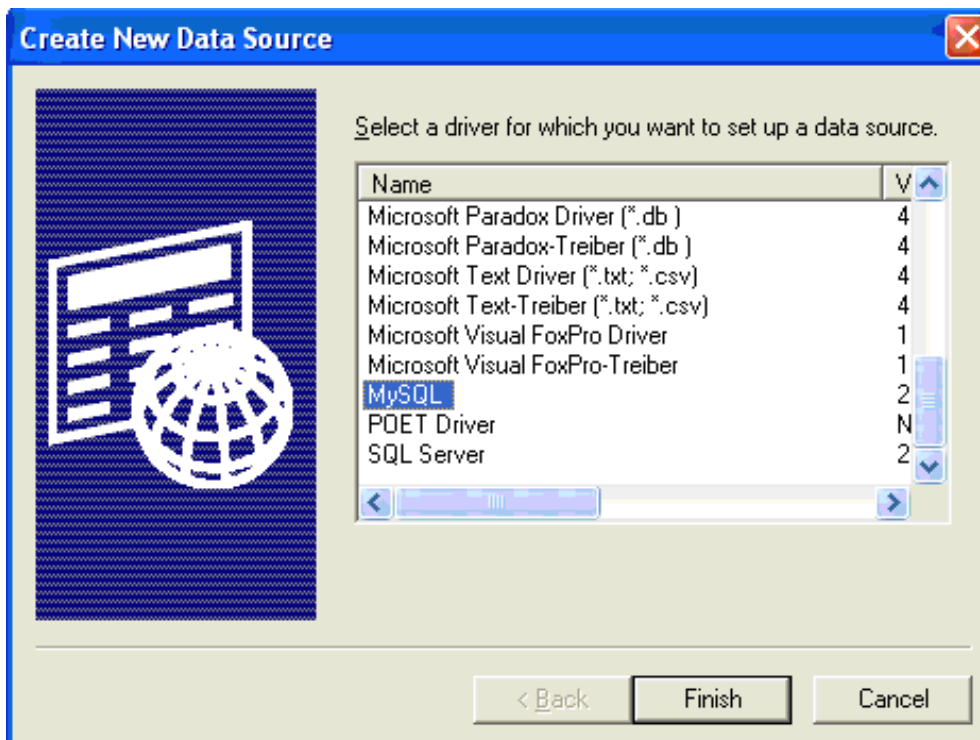
## Install the software

Select "system DNS"

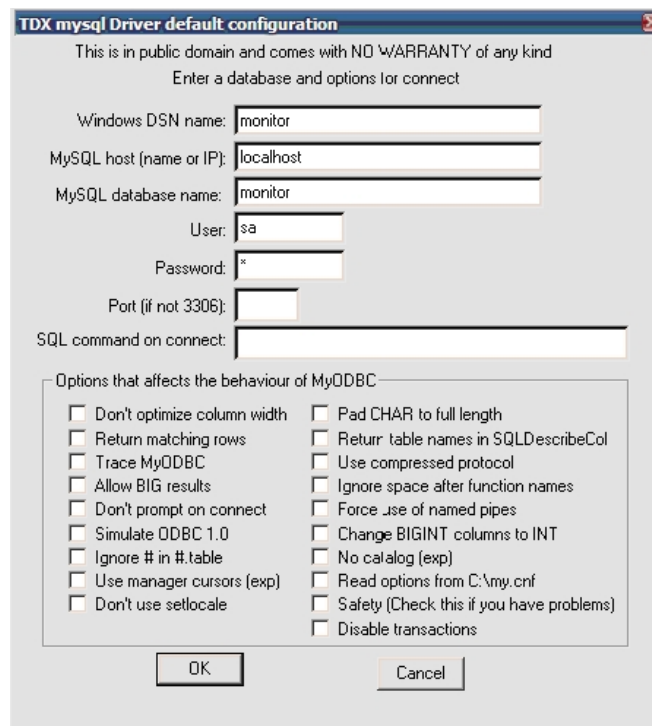


Click and add

## Install the software

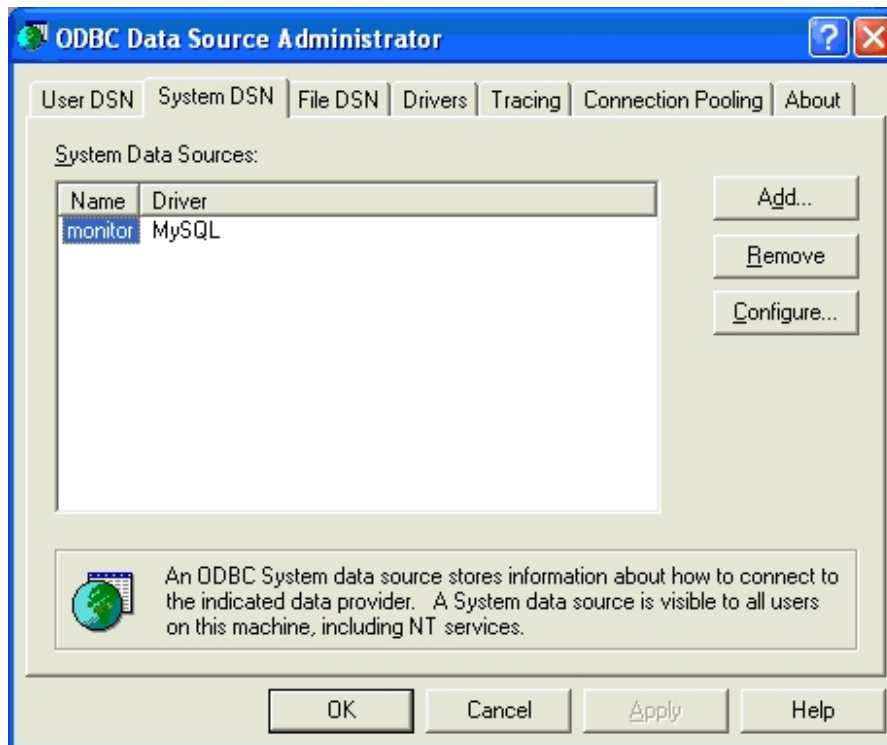


Select \*mysql\*, then click "finish"  
Input according to the below information in the page:



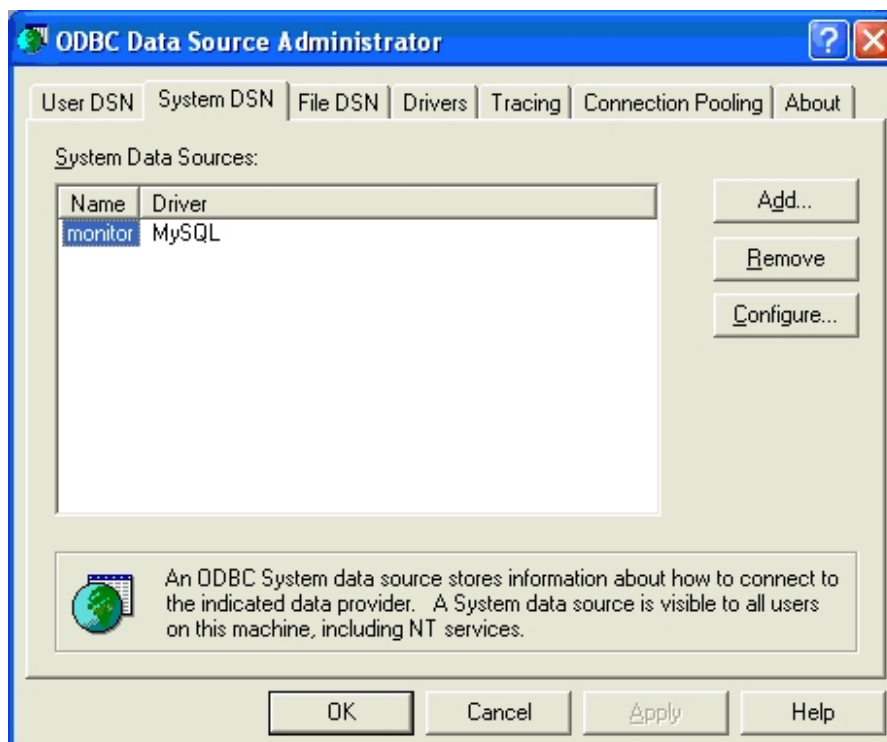
Password is 1

## Install the software



Click OK

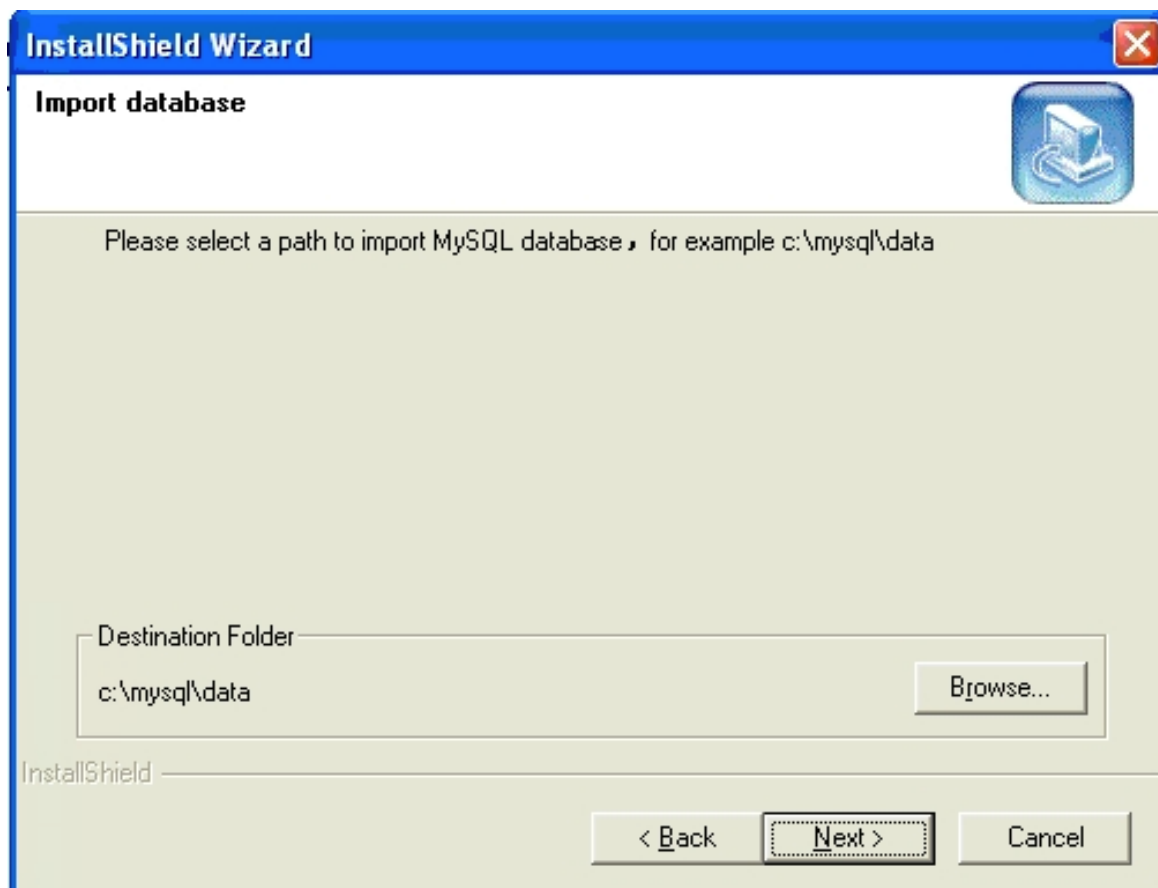
## 3. Software installation



## Install the software



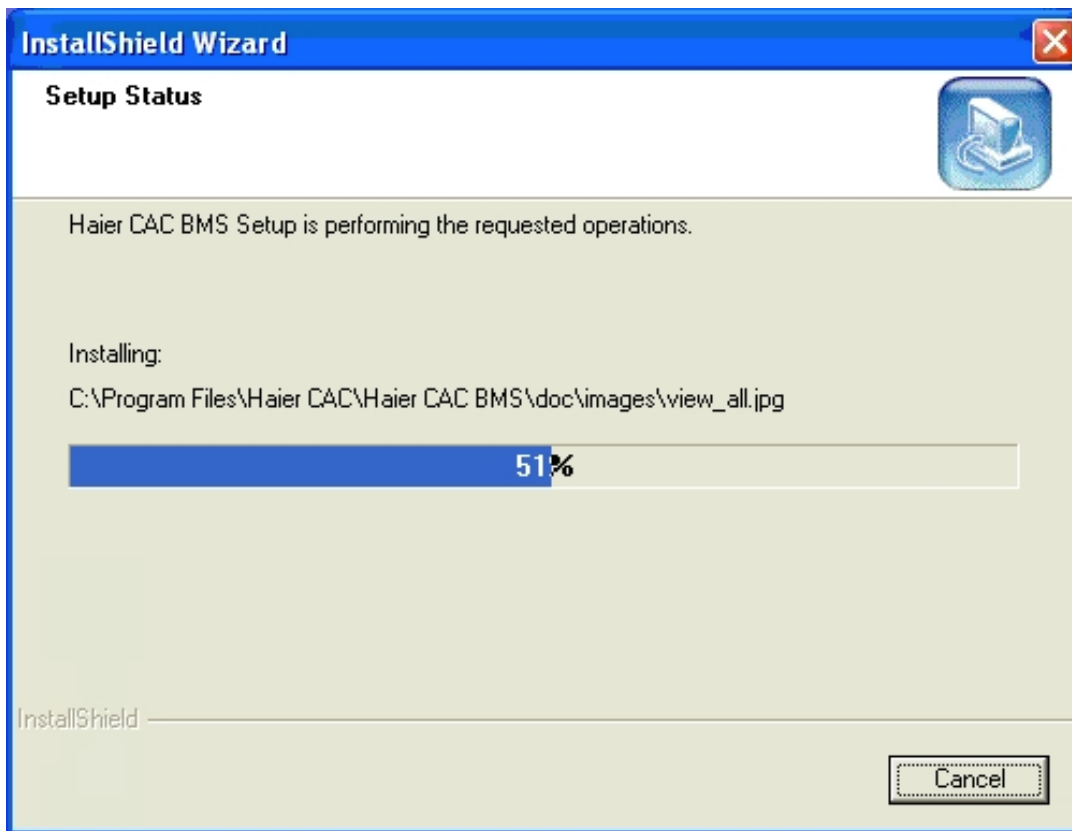
## Next



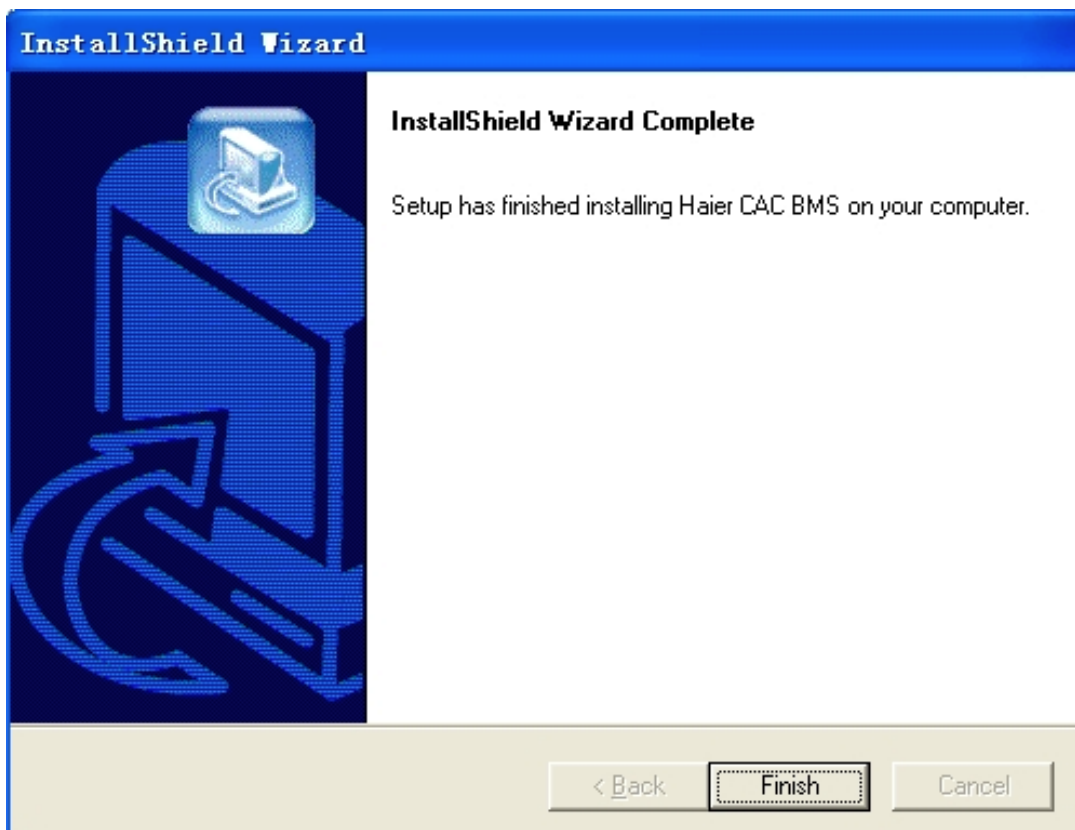
## Next



## Install the software



## Next



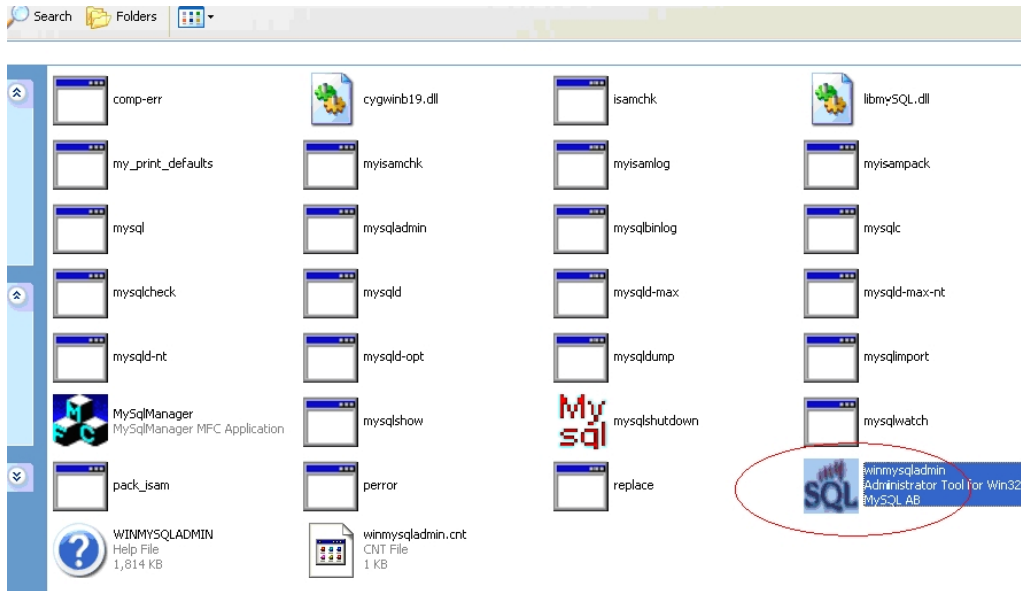
## Click finis

## Install the software

Software startup:

Startup of database

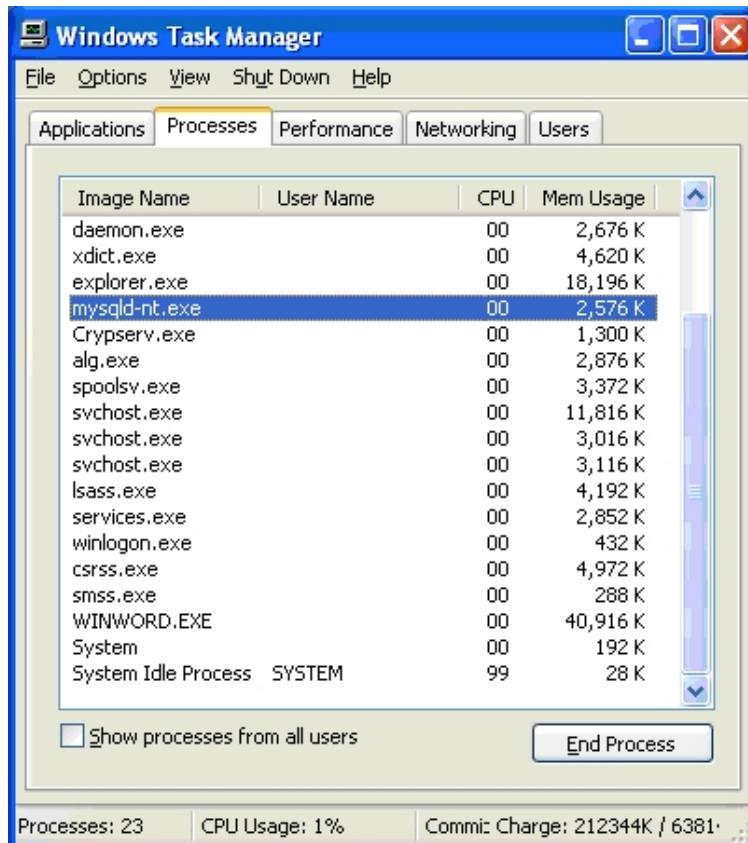
In the folder C:\mysql\bin, look for winmysqladmin.exe and click twice to open it.



Note: Install mysql for the first time, open it, then you need enter username and password, username is "sa", password is "a".

Problems in installation:

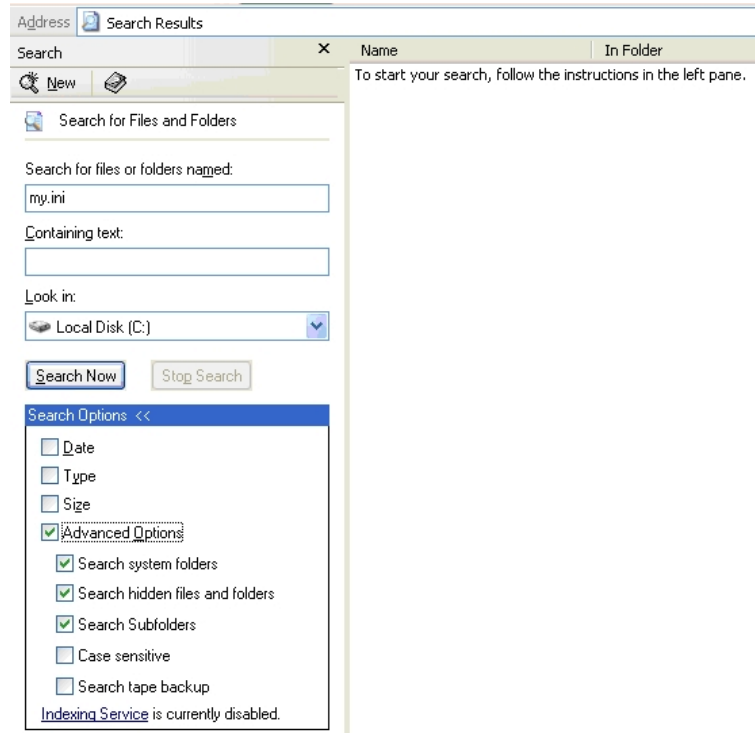
If problem occurs, the system needs to be re-installed. Firstly stop "mysqld-nt.exe".



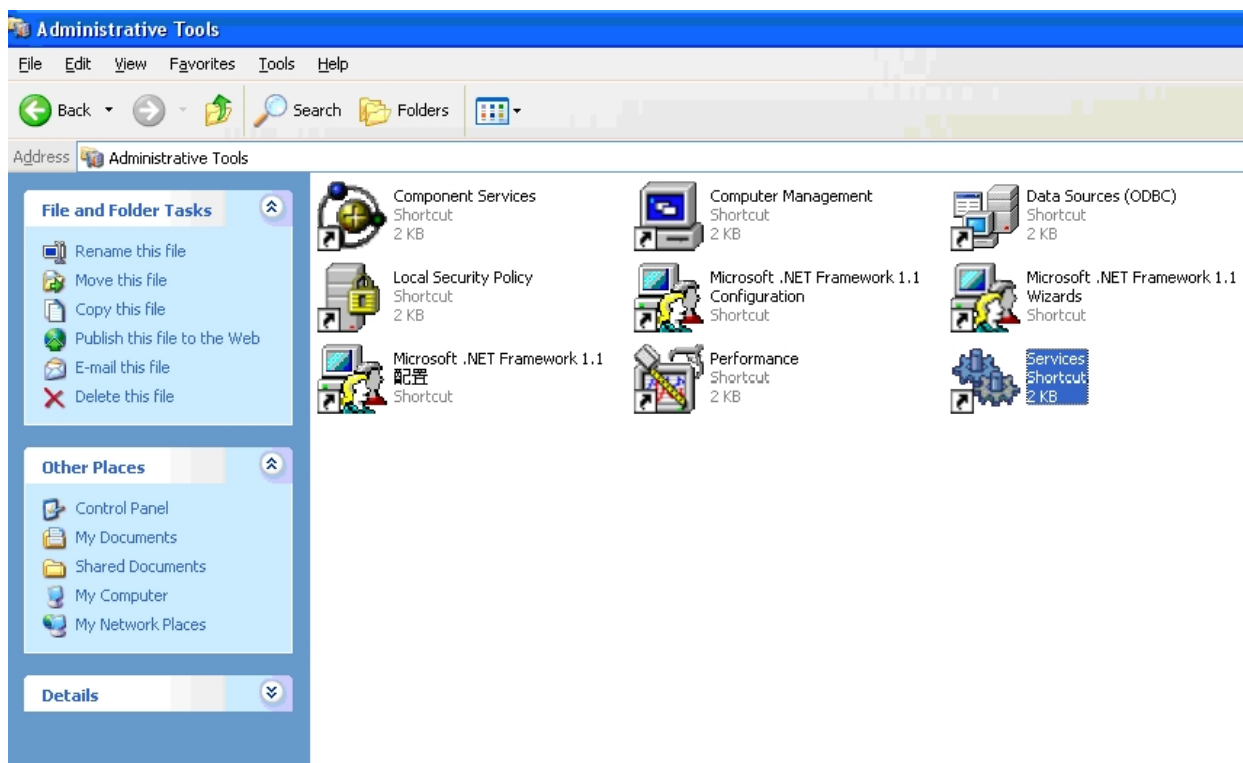
## Install the software

Search the file "m.ini" in disk C, then cancel it.

If it cannot be found, modify the search item, as the following:



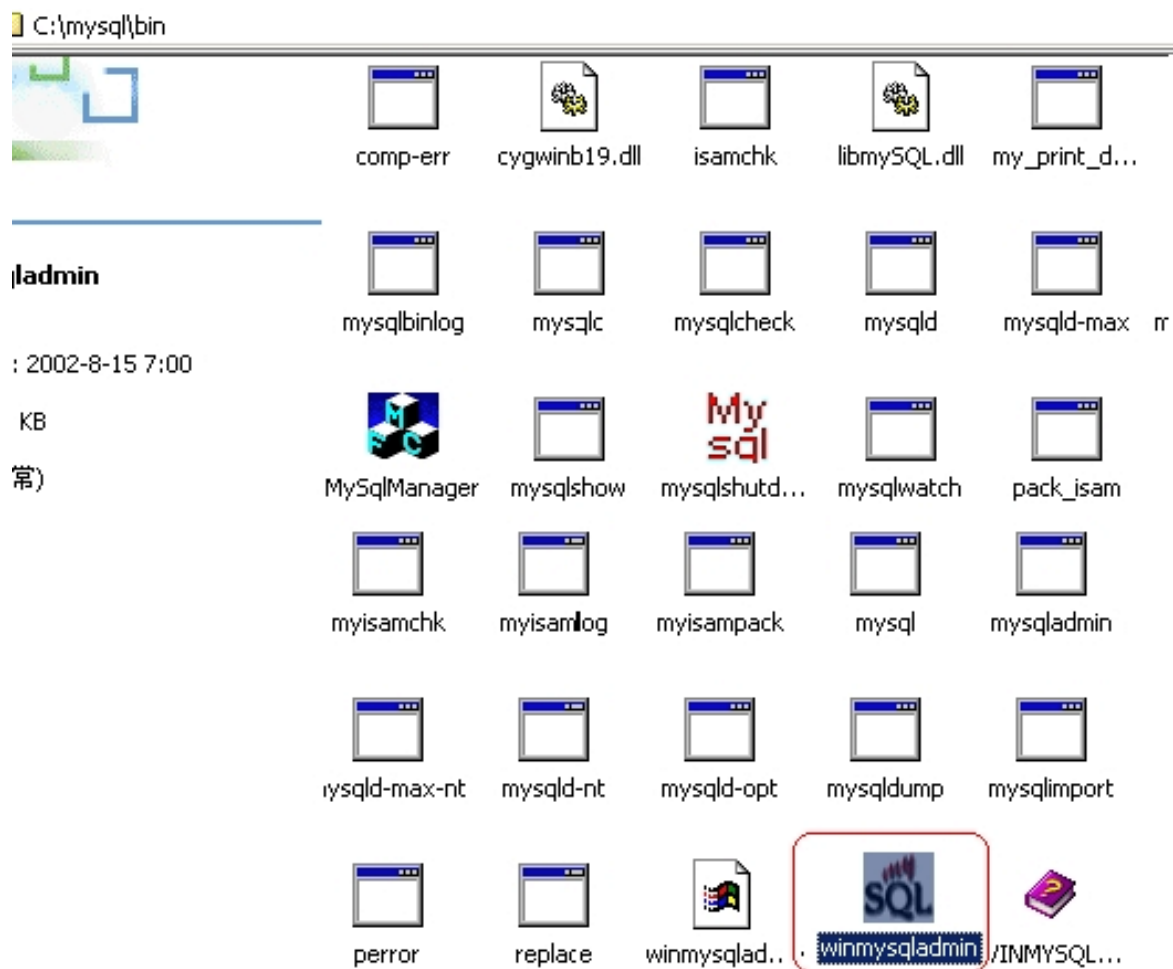
Choose the three items (search system folder, search hidden file and folder, search sub-folder) as the figure. Stop "mysql" in "service" in the manage tool folder, if it is already stopped, you need not change it.



## 4. Design

### 4.1 Start up

First, press winmysqladmin from file C:\mysql\bin to start myself database.



Then double press logo software ,start the software



## 4.2 Login

Enter username and password (the username and password can be got from Haier CAC HQ )

## 4.3 Add equipment

Unit Type: Select indoor or outdoor unit

COMM ADDR: Indoor central address;

IGU02 ADDR: Converter address Adapter address

Building: Building number

Floor: Floor number

Room: Room number

User: User name

Model: Indoor model

B: Cassette type          D:Ceiling concealed duct type

C:Ceiling and floor type S: all-mounted type;          F: Console type

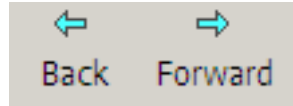
According to the real indoor unit information of site ,fill into each indoor unit information , press add after finis each indoor unit ,the information will be appear in the left side .Finish all the indoor information as above process.

## 5. Software Application

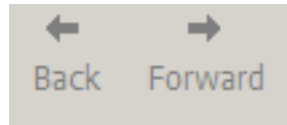
### 5.1 Toolbar operation

#### 5.1.1. Browse

Browse button are as follows:



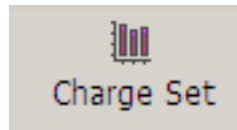
Only when main view display Help document or the history list information are too many to display with different pages, the browse button can be in Activation condition. Otherwise, button see as follows:



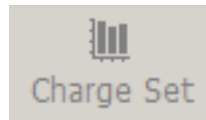
### 5.2 Charge setting

When the system in login condition and the user have the right of “allow setting system running parameter” condition ,the “Charge setting” button have activation condition, otherwise, the button display as nonactivation condition.

Activation condition:



Non-Activation condition:



If the air conditioner don't calculate the operation cost ,High, Low & normal cost time segment setting and each month cost setting can be done by this tool. Press “charge set” button of toolbar (see above diagram). System will display “charge set” dialog box (see below diagram)

**Electricity Fee Set**

**Free Charge A/C Set**

Building: office

Floor: 1

Room: 102

User: boss

Unit Num: 1HI1

Split the Bill: Yes

NO	Building	Floor	Room	User	Unit NO

Add    Delete

**Charge Type Set**

Grade:

Start Time: 10:46:45

Price(Unit/Kwh):

Grade	Start Time	Price
High	08:00:00	1.86200
Normal	17:30:00	1.26800
Low	23:00:00	1.08000

0%

Modify    Download

**Fixed Charge Set**

Fee: 12.000 Unit/Monthly

✓ Set

✗ Exit

### 5.2.1 Power cost setting

The power cost can be calculate according to different time period ,such as one day can have some High, low or normal period ,and can set each period electricity ratio. User can revise each period start /end time and each period power electricity ratio.

Revise method are as follows: First press High grade ,then fill the electricity ratio data and change the start time, then press modify button ,finish other two setting use the above setting method

**Warning:** after all the setting finished ,pls. send the electricity ratio transferred to all the units, the transfer method are as follows :Press Download button then the system will auto download all the setting to IGU02,and download percent process also can be displayed ,after download finished ,the system will indicate: download success. If some units don't download well, the system will supply IGU02 failure address so that we can check it..

**Charge Type Set**



Grade

Start Time

Price (Unit/Kwh)

Grade	Start Time	Price
High	08:00:00	1.86200
Normal	17:30:00	1.26800
Low	23:00:00	1.08000

0%


 **Modify**
 **Download**

### 5.2.2 Fixed charge setting

Fixed charge is monthly fixed cost setting as follows

**Fixed Charge Set**

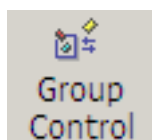
Fee  Unit/Monthly

 **Set**

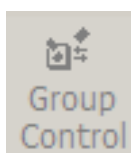
### 5.3 Group control

Only when the system in login condition and the user have the right “allow control the air conditioner”,group control button in Activation condition, otherwise ,Button in Non-activation condition.

Activation condition:



Non-Activation condition:



Press button “group control ” of toolbar (see as above picture) ,the system display the following dialog box (see as follows):

Group Control

**Single**

**All**

Indoor Unit Select

Building

Floor

Room

User

Unit NO

ON/OFF

Temp. Set

Control Mode

Work Mode

Fan Speed

Control Guage 0%

**User**  
 User Select

**Group**  
 IGU02 Addr Select

**Floor**  
 Floor Select  
 Building   
 Floor

**Press to Control**

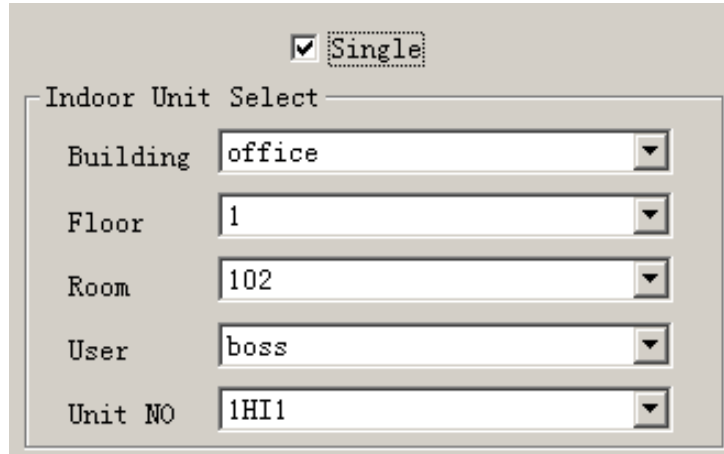
**Exit**

The system will supply 5 control modes: Single control, user control, group control ,floor control and all control

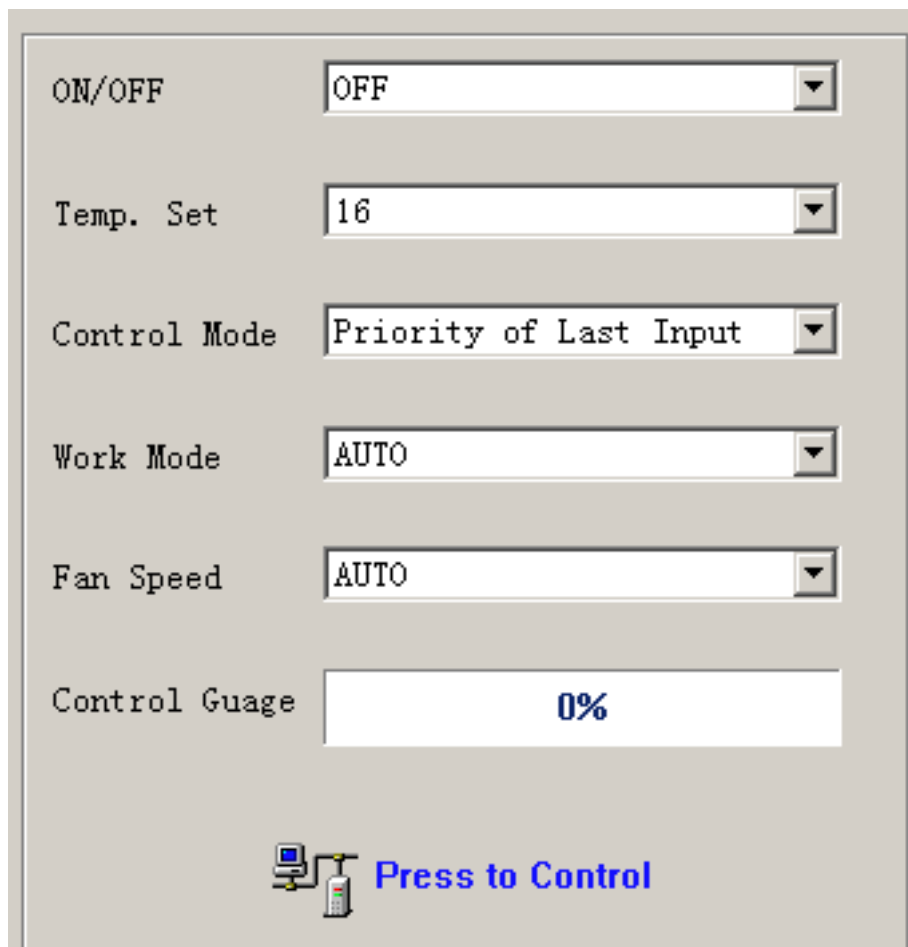


### 5.3.1 Single control

Press single control checking box to select single control mode, select all the data in each items.



After select the indoor unit ,then he can select the control mode and parameter (see as follows).then press control button to send out command ,and the control process can be displayed in the process block ,and some suggestion message be sent out.



### 5.3.2 User control

Press User control checking box to select the user control mode, see as follows:

Select the user name in user information button ,then he can select the control mode and parameter (see as follows).then press control button to send out command ,and the control process can be displayed in the process block ,and some suggestion message be sent out.

**Attention:** One user can have several sets indoor units ,and each indoor unit need different operation period.

### 5.3.3 Group control

Press group control checking box to select the group control mode, see as follows:

Group control method can control all the equipments below IGU02.Select the IGU02 address, then select the control method and parameters , then press control button to send out control command ,the control process can be displayed in the process bar ,and the control result have indication ,the speed is quite fast.

### 5.3.4 Floor control

Press Floor control checking box to select floor control mode, see as follows

Select the floor and building number ,select the control mode and parameter from right side dialog box., then press control button to send out control command ,the control process can be displayed in the process bar ,and the control result have indication ,the speed is quite short.

**Warning:** One floor can have several sets indoor units, control time is different according to indoor units quantity.

### 5.3.5 All control

Press all control checking box to select all control.

All control is control all the units ,that is fully open or fully close. Select the control mode and parameter from right side dialog box, then press control button to send out control command ,the control process can be displayed in the process bar ,and the control result have indication ,the speed is quite fast.

### 5.4 Timing setting

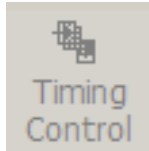
Only when log in the system and the user have the right of “all control the air conditioner ” ,timing setting button be in Activation condition, otherwise, the button in non-activation condition. Timing setting includes “Periodic” and “No periodic” timing control two parts.

Notice: If “Periodic ” & “No periodic” timing control be set at the same time period ,then two operations action happens at the same time .If act “Periodic ” timing control ,if “non-periodic” timing time comes ,then the system will be in “non-periodic” action. Because the “non-periodic” have high priority.

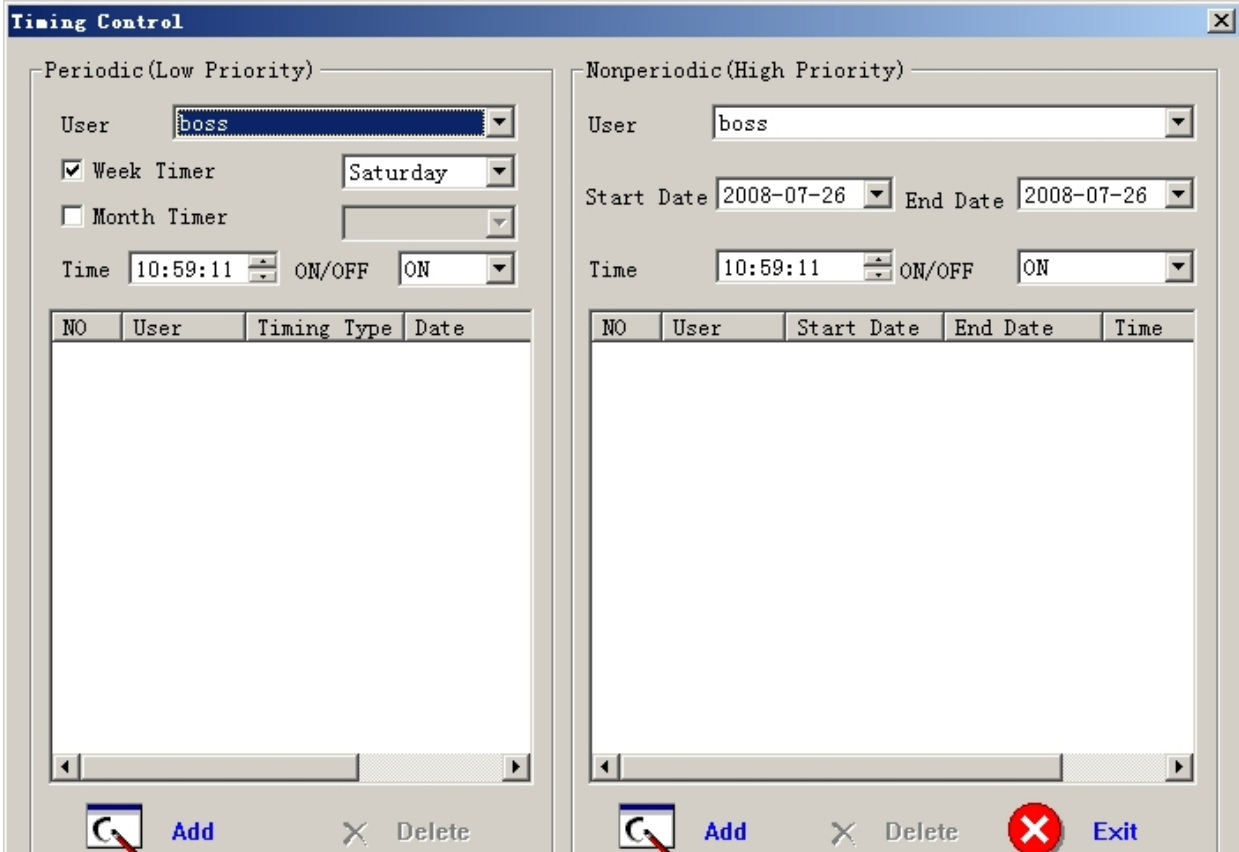
Activation condition:



Non-activation condition:



Press “timing setting” button with mouse (see as above ) ,the system will display “timing setting” dialog box (see as follows pictures).



## 5.4.1 Periodic timing control

Periodic timing control

Can be divided into two mode: weekly timer and monthly timer .

Use “weekly timer” control mode’s user can set weekly setting and timer ,see as follows, the “boss” user set 7:30 open the unit every Monday.

Timing Control

Periodic (Low Priority)

User

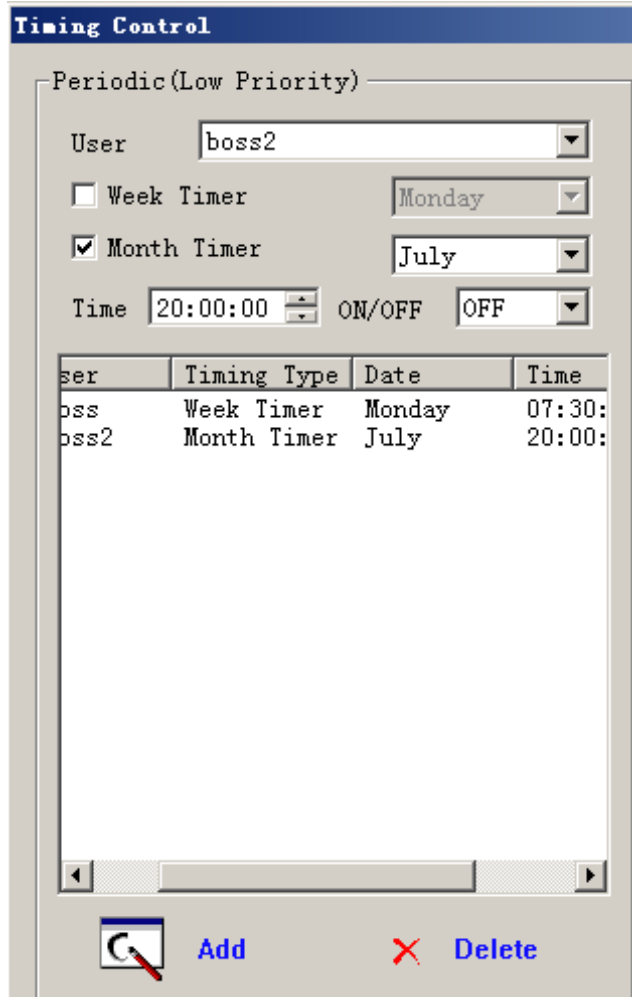
Week Timer

Month Timer

Time  ON/OFF

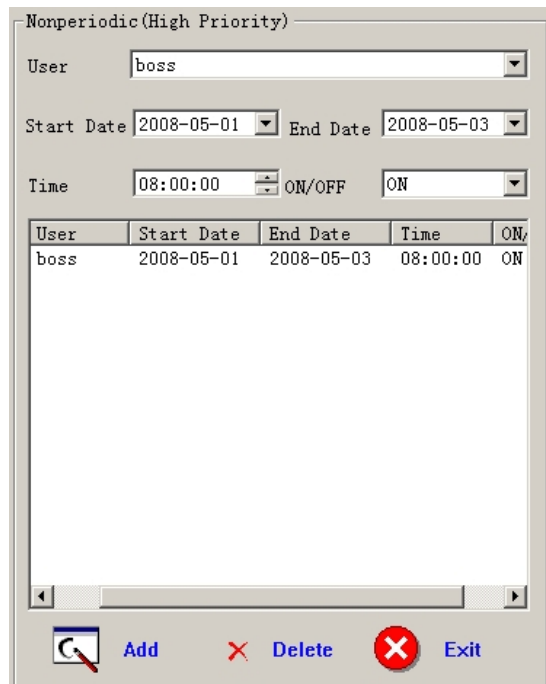
User	Timing Type	Date	Time
boss	Week Timer	Monday	07:30

Use “monthly timer ” control mode’s user can set all the indoor units monthly setting and timer. See as follows :”boss 2” close the units every 20:00 in July.



#### 5.4.2 No Periodic timer setting

“No Periodic” timer mode user can set time operation every time period, see as follows: the “boss” user set 8:00 in the morning open the unit from May 1st till May 3rd.

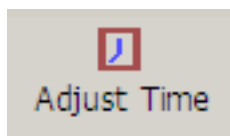


## 5.5 Adjust time

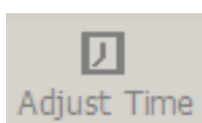
The equipment & software must adjust time before use it.

Only when the system in login condition and the user have the right of "allow control air conditioner", the adjust time button can be in Activation condition, otherwise, the button in Non-activation condition.

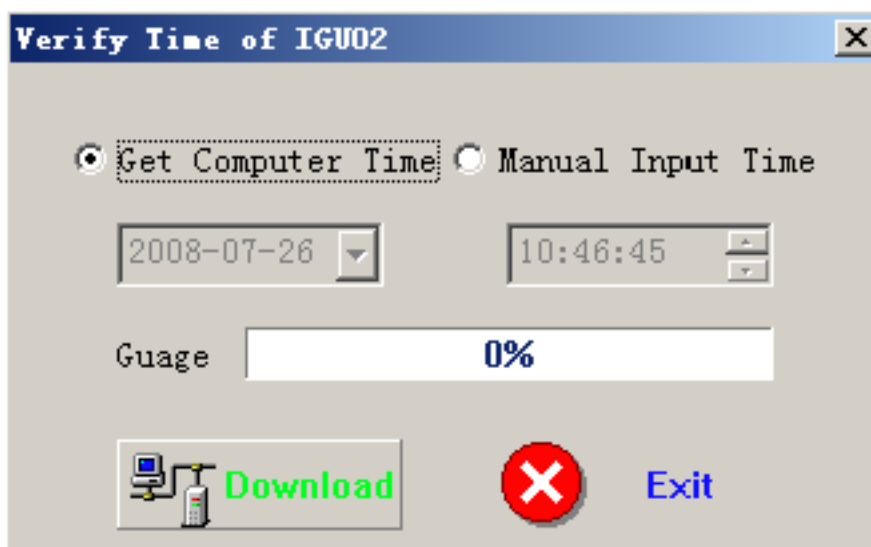
Activation condition:



Non-activation condition:



Press the button adjust time button of toolbar, the system will display adjust time dialog box (see as follows).



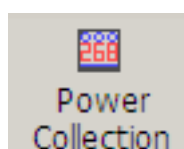
The main target is unify the time of all the adaptor, avoid power consumption error difference. You can get the time from local computer or can input the time by manual.

Press download button after finish adjust timing, system will download the time to each adaptor, and the download process can be display in the screen, if success, the indication will be "adjust time success", otherwise, the system will indicate the adaptor's address.

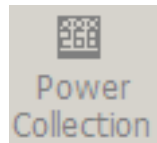
## 5.6 Power cost collection

Only when the system in login condition and the user have the right of "allow set system operation parameter", the "power collection" button in activation condition, otherwise, the button in non-activation condition. This software have power collection mode selection and power cost pulse setting functions.

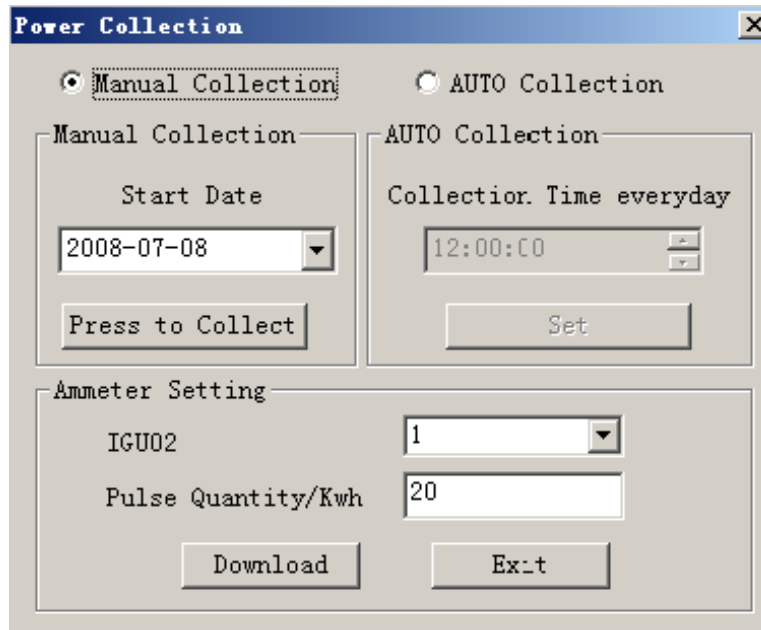
Activation condition:



Non-activation condition:

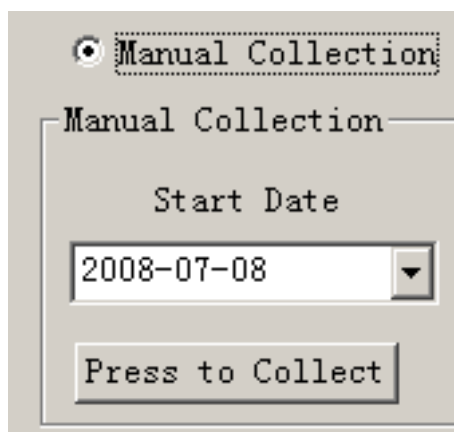


Press “power collection ’ button with mouse ,the system will display power collection dialog box (see as follows).

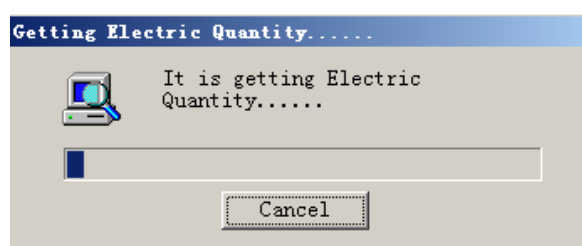


### 5.6.1 Manual collection

Press “manual collection” checking box to select the manual collection method ,the system can’t automatically display each indoor unit’s power cost .see as follows:

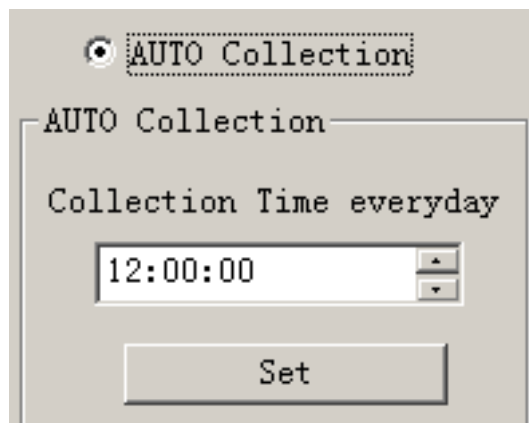


User can select start time then press “press to collect “button, the system will collect each day’s power consumption quantity from the select date ,and display the following dialog box .During the collection period ,user can press cancel button to cancel the operation. After collection finished ,the dialog box will be disappeared automatically.



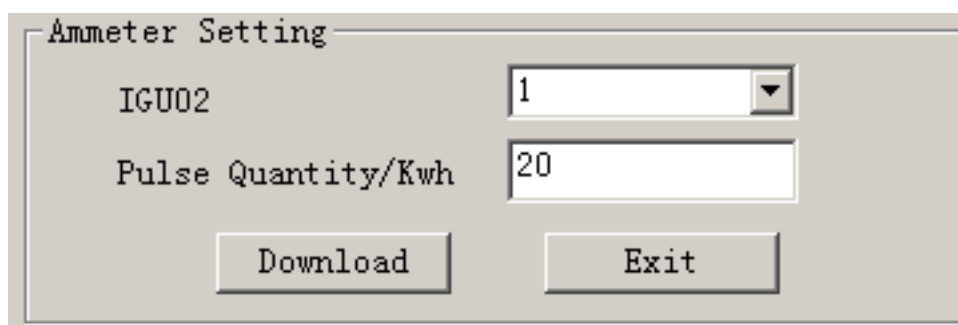
## 5.6.2 Auto collection

Press auto collection checking box to select automatic collection method. The system will collect the power consumption quantity once the setting time reached. See as follows:



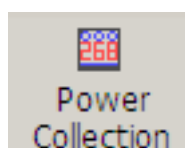
## 5.6.3 Ammeter setting

Ammeter setting is set the pulse quantity of each kWh of each IGU02. After setting finished, press download button to save the setting into each adaptor. Each Pulse quantity setting data can be different according to real request., the download process can be displayed in the screen, if finished, the indication message will be "all the adaptor's Pulse quantity setting success", otherwise, the system will point out the unsuccessful adaptor's address.

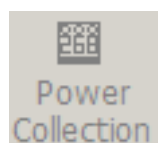


## 5.7 History record list

Only when "history record" view be in main view window, the history record tool in Activation condition. Activation condition:

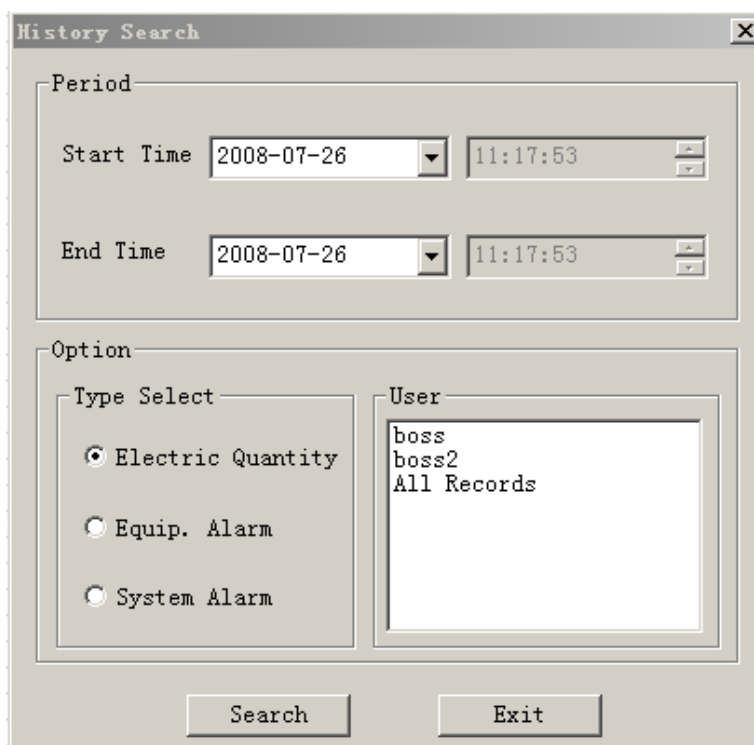


Non-activation condition:



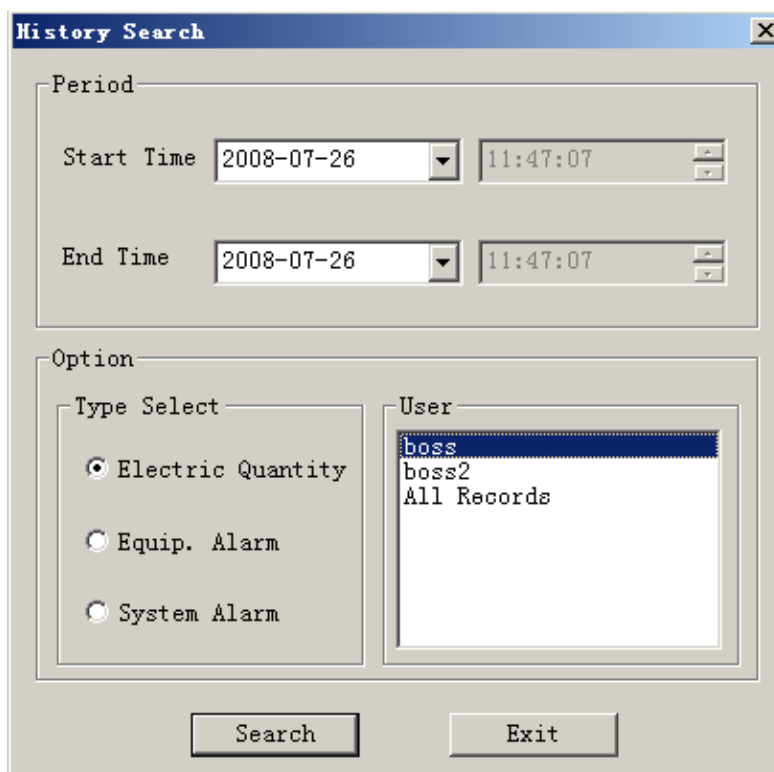
Press history record button with mouse(see as above) or press history list of Main monitor view (history record view not opened), the system will display "history search" dialog box (see as follows), we can check electricity quantity, equipment alarm record and system alarm record information.



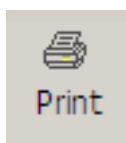


### 5.7.1 Electricity quantity record

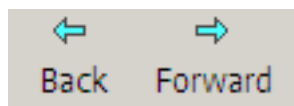
Press “electricity quantity” checking box to select electricity quantity record ,select start and stop time ,then select the user (can use mouse select ,and can select multi user at the same time),see as follows:



Press search button, the electricity consumption record lists will be displayed in the main view window.

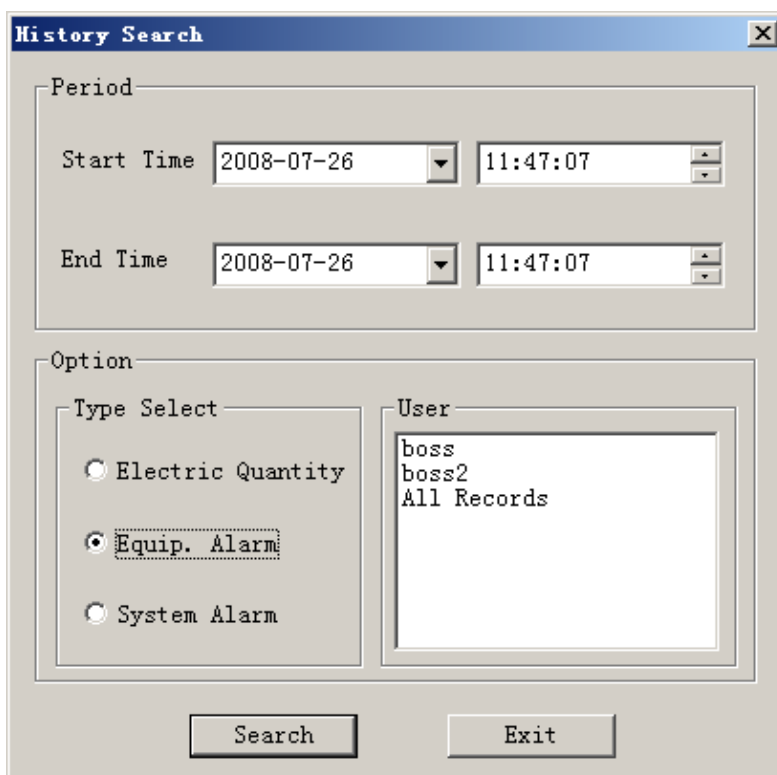


Press to print out the electricity consumption list. If the record lists more than 500 items, the browse tool of toolbar will be valid:



### 5.7.2 Search the equipment alarm record list

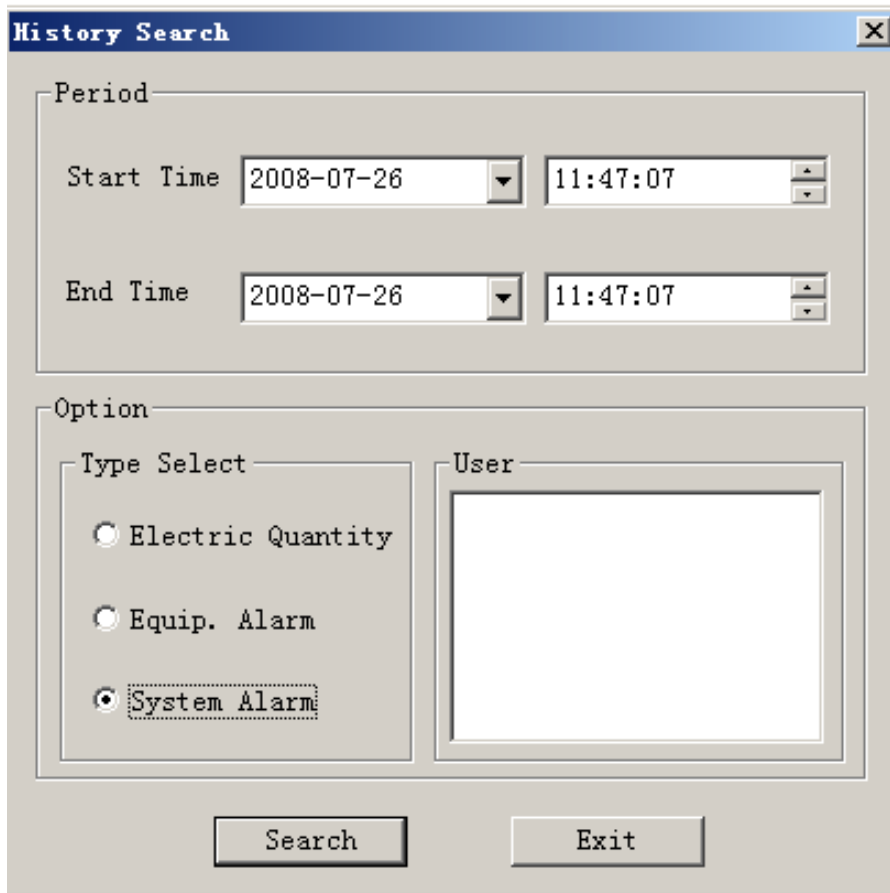
Press the equipment alarm record list checking box to select the equipment alarm record list ,select the start and stop time ,select the user from right side user lists (use mouse select the list and can select several users),see as follows:



Press search button, the equipment alarm lists can be displayed in the main view window and print out.

### 5.7.3 Sear system alarm record lists

Press search system alarm record lists checking box to select the system alarm record lists, select start and stop time ,see as follows:



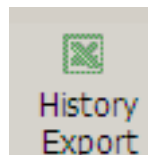
Press search button ,the system alarm record lists will be displayed in the main view window, see as follows, press print button can print out the lists.

NO	AlarmType	AlarmContent	RecordTime
1	System Alarm	No Equipment!	2008-07-26 10:45:10
Start Time	2008-07-25 11:59:48	End Time	2008-07-26 11:59:48

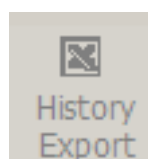
### 5.8 History record output

Only when “history record ” view be in main view window ,the “record output ” button can be in Activation condition.

Activation condition:



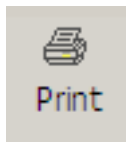
Non-activation condition:



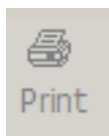
Press "history record output", the system can output the history record information with EXCEL file

## 5.9 Print

Press print button to print out the history record:



Only when the system display history record, the print button can be in Activation condition, otherwise the print button in non-activation condition:



If you want to print out the information pls. prepare the local printer or remote printer.

## 5.6 HCM-03(old)

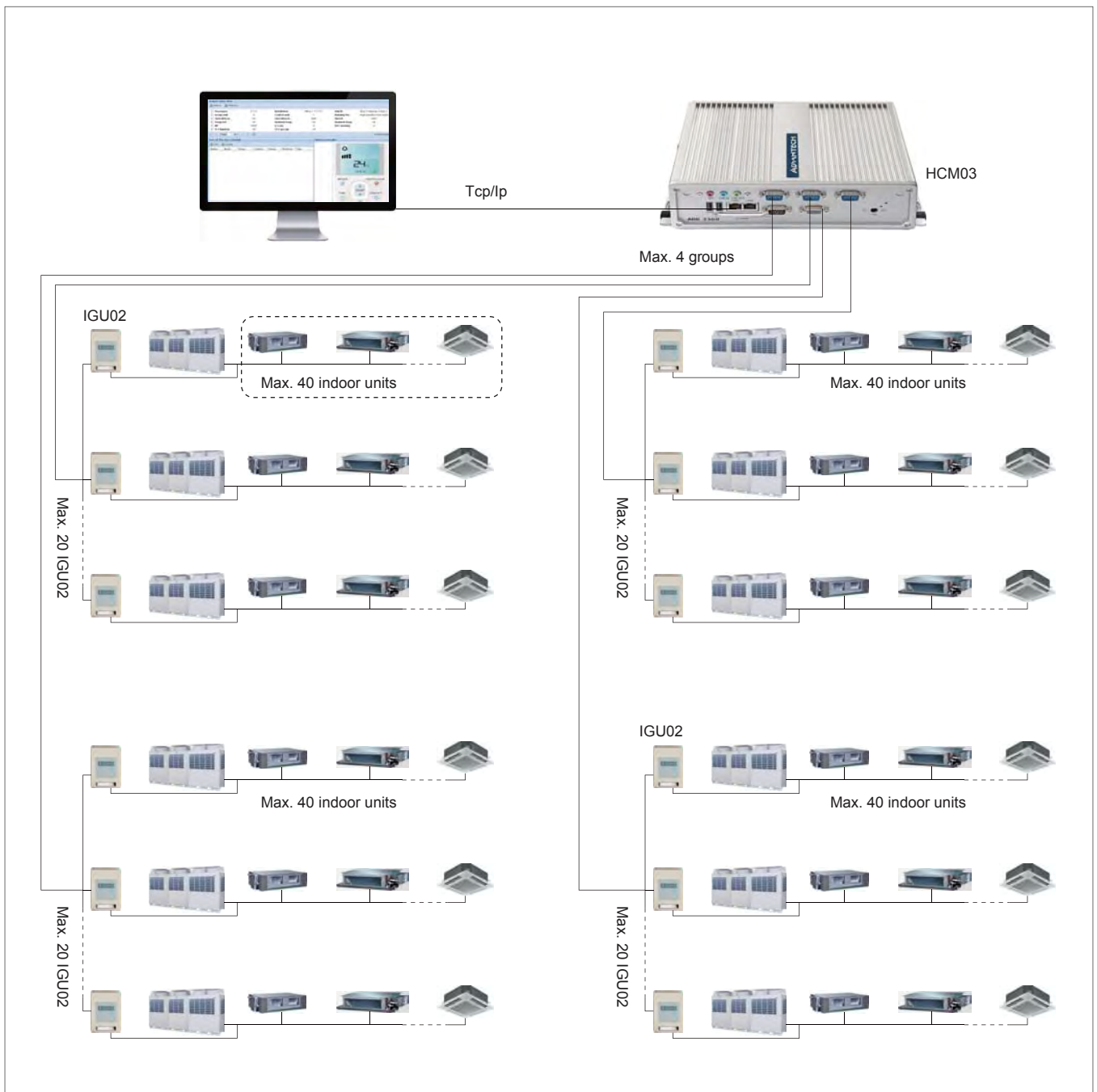


MRV	LCAC			
	Smart Power	Super Match	R410A ON/OFF	R22 ON/OFF
√	√	√		

### 1. Feature

- Remote monitoring version; Third party interface: BACnet ip/ Modbus ip/ Modbus rtu
- Max. 1000 indoor units can be controlled
- Max. 4 groups. Each group can connect 20 systems. Each system requires one HA-M\*1
- Operation status setting & monitoring.
- Schedule setting
- Multi user management with different authorized levels
- Operation and Error history log
- Max. 4 groups for each HCM-03
- Max. 20 HA-M\*1 for each group
- Max. 40 indoor units for each HA-M\*1
- Max.1000 indoor units can be controlled by one HCM-03

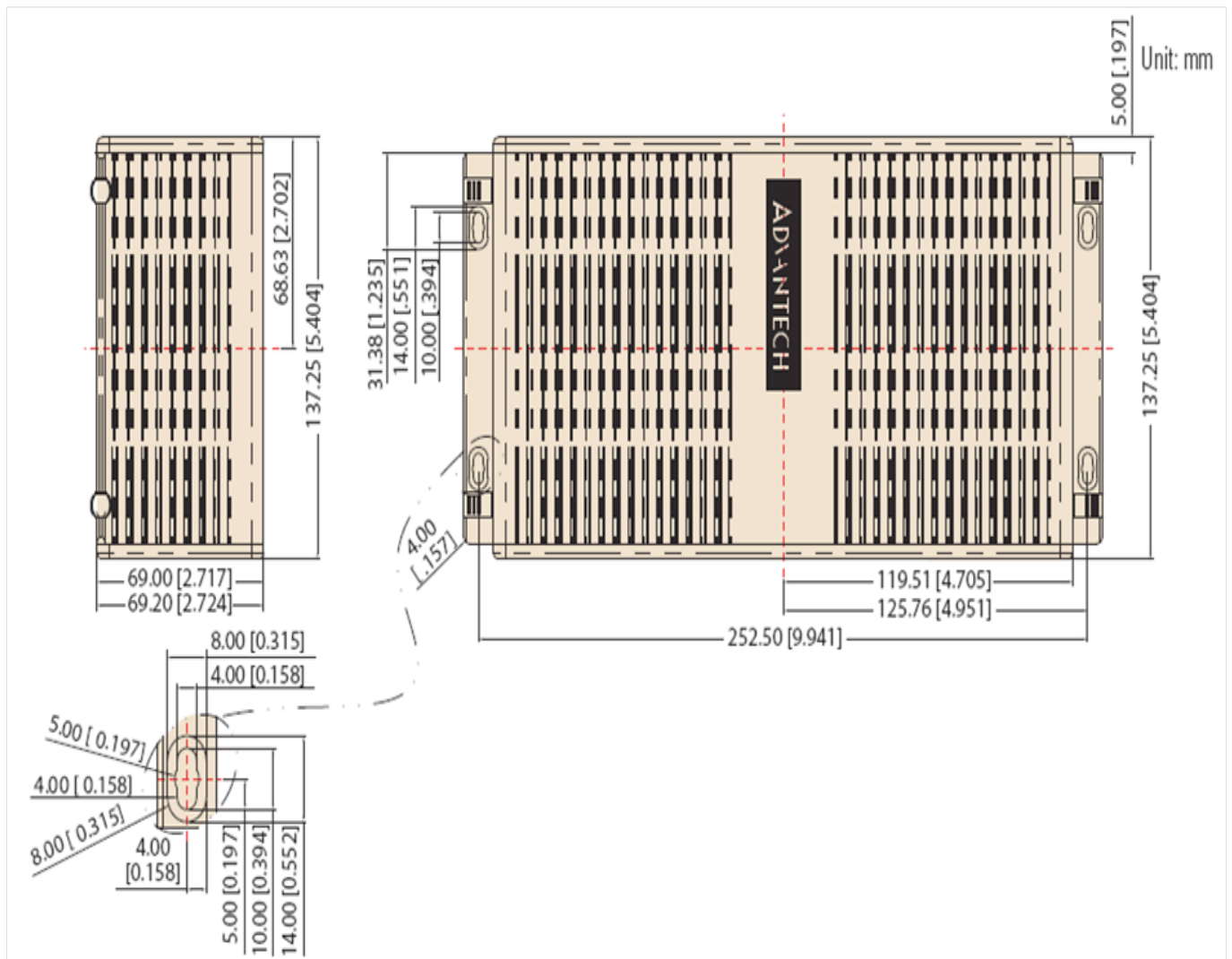
## 2. system



### 3. Specification

Model		HCM-03
Band		yanhua
Net dimension		137.25*260.5*69.2mm
Net weight		3.5kg
Power supply		100-240V AC 50/60hz
Max. connection quantity of gateway		80 (4 groups)
Max. connection quantity of indoor unit		1000
Operating temperature range		0°C ~45°C
Operating humidity range		10%-85%
Protocol type		homebus
Gateway	Model	IGU02
	Power supply	220V AC 50Hz
	Function	transform homebus protocol to 485 protocol
	Operating temperature range	-30°C ~55°C
	EEPROM	1M
	Max. connection quantity of indoor unit	40
Communication connection		RS485
Max. communication length		Lower layer : Maximum 1000m (RS485)

## 4. Dimension





## Brief

With the charging management system HCM-03 for multi-split air conditioner sets, which use a protocol converter IGU02 to transfer all parameter values of the air conditioner system to a computer, the user can monitor the operating state and electric energy consumption status of outdoor and indoor units of the air conditioner system on the monitoring computer, conduct various settings including parameter setting in time, realize individual start, group start, and timed control of indoor units, receive the alarm information from the air conditioner system in a real time manner and take corresponding countermeasures, and create various charging report forms according to the corresponding processing of acquired data, and so on.

Devices required for this control system

1. Translator (IGU02): It is responsible for converting the protocol of the air conditioner system into RS485 protocol for output, receiving the pulse signals from the Ammeter, calculating and storing the charge for the connected air conditioner system, and transferring the charge to the computer.
2. HCM-03: It includes hardware, which is a small industrial computer, and software, which is a man-machine interface used for display and control of air conditioner parameters; it can collate and store charge and output charge report forms, and can realize remote monitoring, etc. through a LAN and the internet.

## Control scale

1. For installation of air conditioner sets requiring an air conditioner management system, the number of indoor units of each air conditioner system shall not be more than 40; otherwise, the protocol converter will not be able to operate normally.
2. One industrial personal computer has 4 RS485 ports, each of which can be connected with at most 20 translators, so one control system can control at most 80 translators.
3. The maximum number of indoor units controlled by one control system is  $4 \times 20 \times 40 = 3200$ . It is recommendable to make the number of indoor units less than 1000.
4. 1 RS485 port with the relative translators is regarded as one group. The maximum communication wire length of each group is 1000m.

## Requirements for applicable regions and relevant certifications

1. Requirements for applicable regions:

Storage temperature range: -40-80

Operating temperature range: 0-45

Storage humidity range: 10-85%RH

Elevation: 0-6000m

Voltage: 100-240Vac                    °C

Frequency: 50Hz/60Hz                °C

Automatic voltage recognition: required; frequency voltage recognition: required;  
standby power consumption: no requirement

2. Safety certification requirements: none

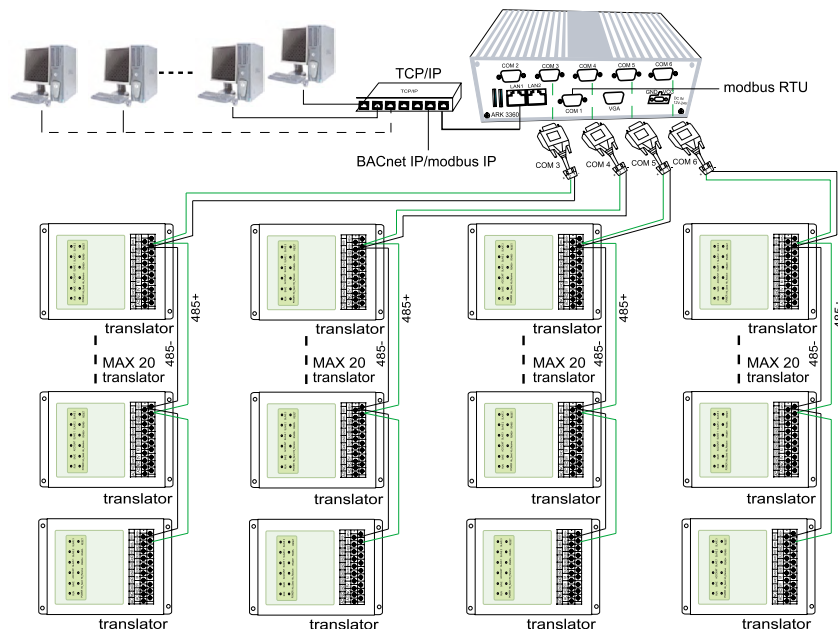
3. Environment certification requirements: compliant with ROHS certification requirements

4. Other special requirements: none

## Requirements for reliability

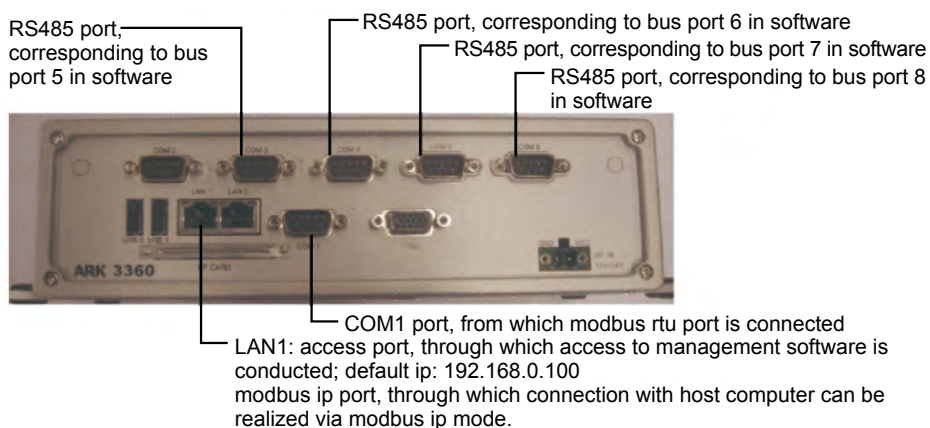
1. GB4706.1-92, GB4706.12-95, GB1238-91
2. Special requirements: none

## System structure diagram



## Ports of industrial personal computer

1. 4 RS485 ports, used for connection with IGU02.
2. TCP/IP network card port, used for connection with LAN and internet.
3. BACnet network card port, an external third-party port.
4. modbus port, a standard modbus port, used for connection from serial port.





Connect a translator to the COM port via a piece of adapter cable by connecting a piece of two-core shielded cable from the translator to "1" and "2" of the adapter cable.

1: connected with RS485- of IGU02

2: connected with RS485+ of IGU02

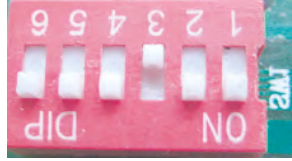
And then connect the adapter cable to the COM port of the industrial personal computer.

### **Power supply for IGU02 and wiring requirements**

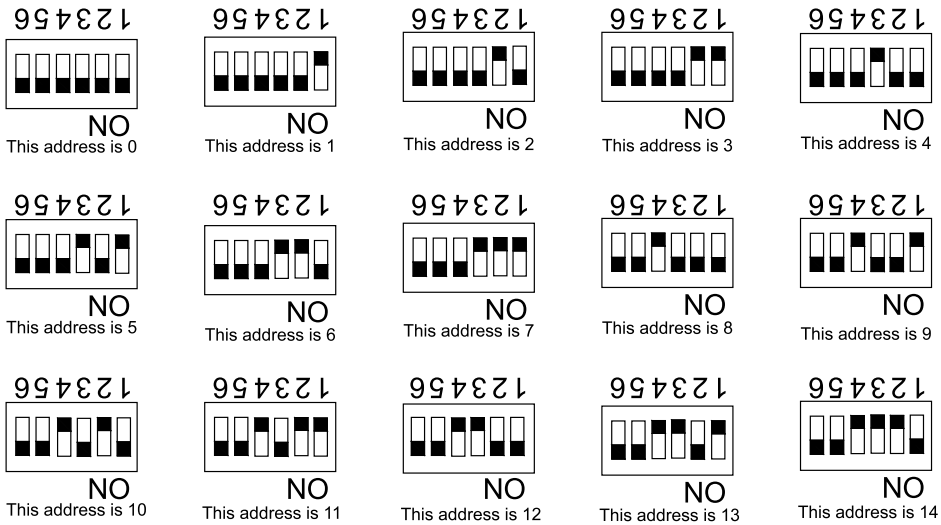
1. 220 VAC/50 Hz power shall be supplied to the translator
2. For any project using an air conditioner management system, iron pipe are required for the communication cables between indoor and outdoor units and for the RS485 buses between translators.
3. The centralized address of indoor units and the addresses of indoor and outdoor units shall be manually set; for the same indoor unit, the centralized address shall be set similarly with the addresses of indoor and outdoor units.
4. For any project using the air conditioner management system, it is not recommended to adopt the application of "Group control".

## Dial code setting for IGU02

ON indicates 0; and OFF indicates 1

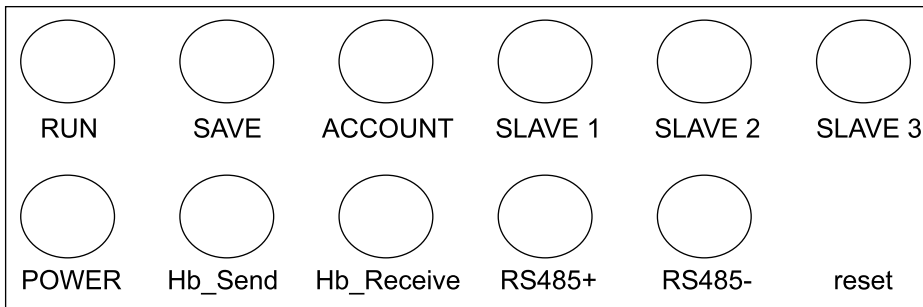


Indicates the address of IGU02, of which the range is 0-31. The address shown in the figure is 4.



## Definitions of and wiring diagram for communication lamps of translator

Definitions of communication lamps:



RUN: It will flash at a fixed frequency in normal operation state.

SAVE: It lights up once when data are saved.

ACCOUNT: Pulse receiving lamp; it lights up when receiving a pulse and goes out when receiving another pulse.

SLAVE1: Empty

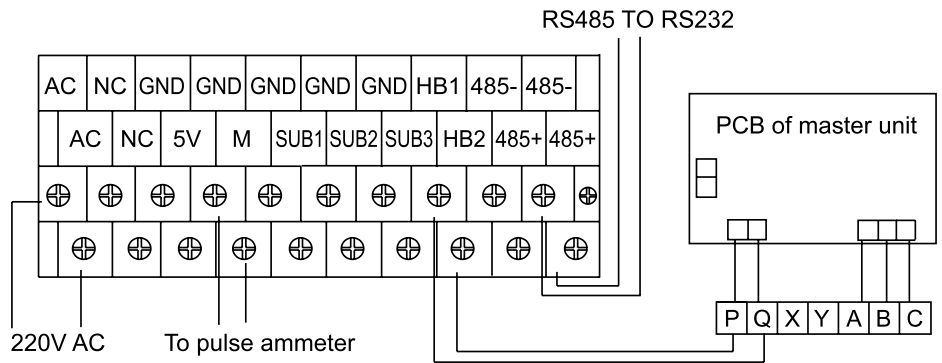
SLAVE2: Empty

SLAVE3: Empty

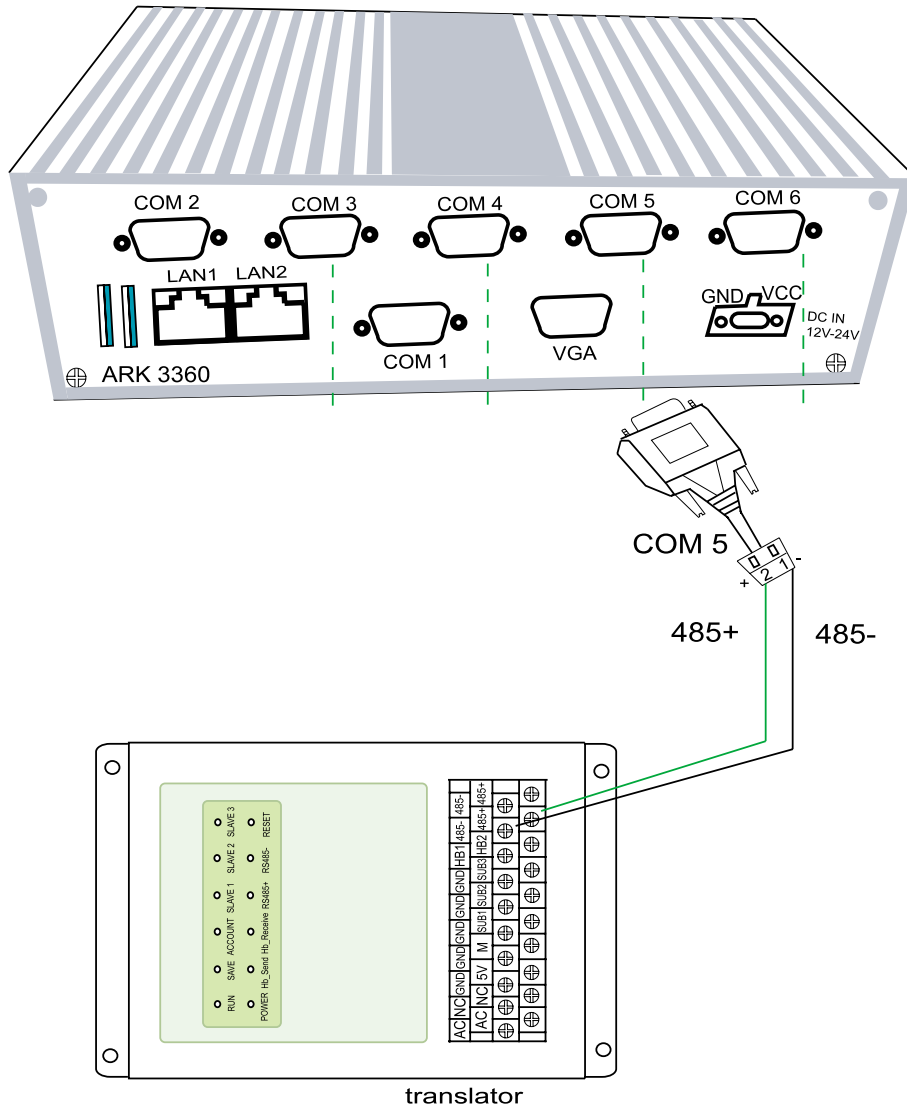
POWER: Power lamp; it lights up constantly when power is on.

Hb\_Send, Hb\_Receive: Lamps for communication with air conditioner set; these two lamps flash alternately in normal communication state.

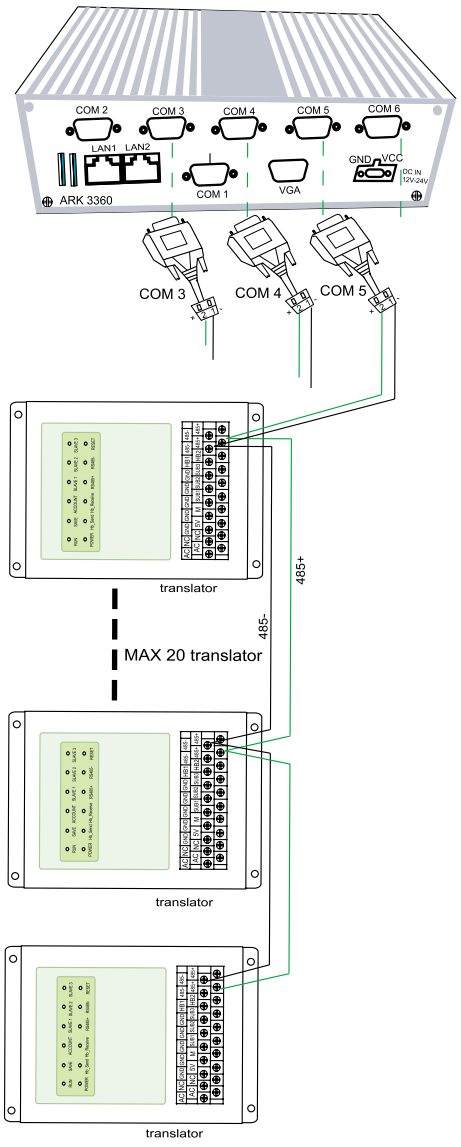
RS485+, RS485-: Lamps for communication with host computer; they flash at a high speed.



## Connection between communication bus and industrial personal computer



1. IGU02 is connected hand in hand, RS485+ ports are connected together, RS485- ports are connected together, and then the RS485+ port group is connected to "2" of adapter cable and the RS485- port group is connected to "1" of adapter cable.

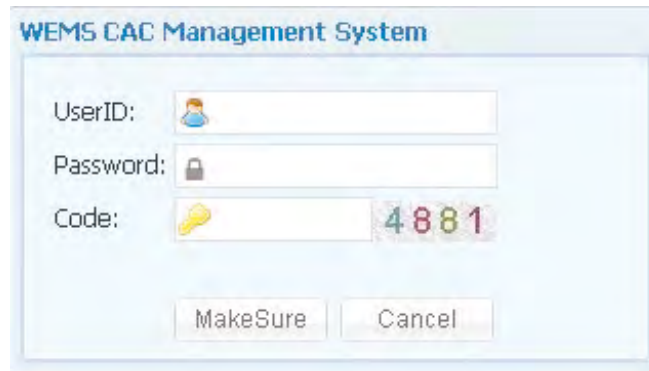


2. The adapter cable is inserted to the COM port of the industrial personal computer.

## Operation of software

### Login interface

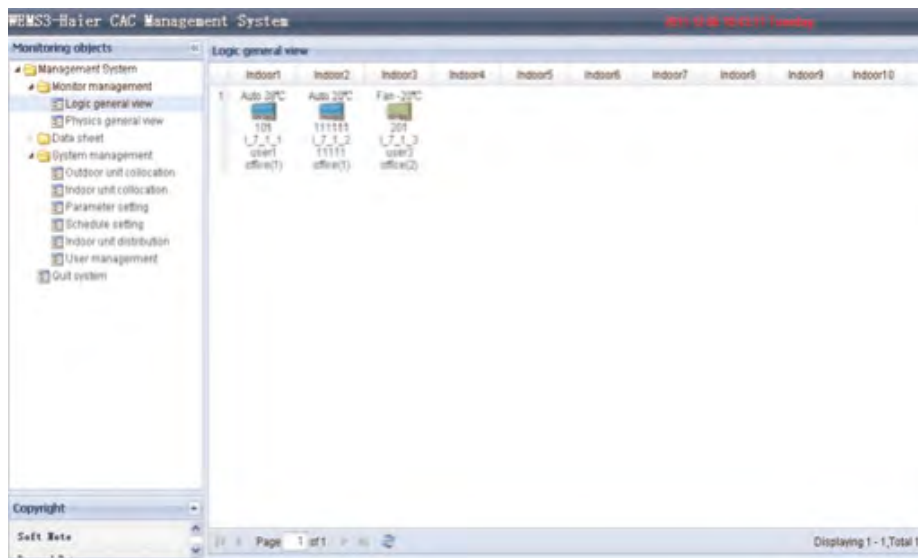
It is required that the browser be Google Chrome 7.0 or above. Type in <http://127.0.0.1:8080/wems3-haiersys> and press the "Enter" key, you will enter into the login interface.



The screenshot shows the login interface for the WEMS CAC Management System. It features three input fields: "UserID:" with a person icon, "Password:" with a lock icon, and "Code:" with a key icon. The "Code:" field contains the number "4881". Below the input fields are two buttons: "MakeSure" and "Cancel".

The initial user name is "admin" and the initial password is also "admin".

### Floor display



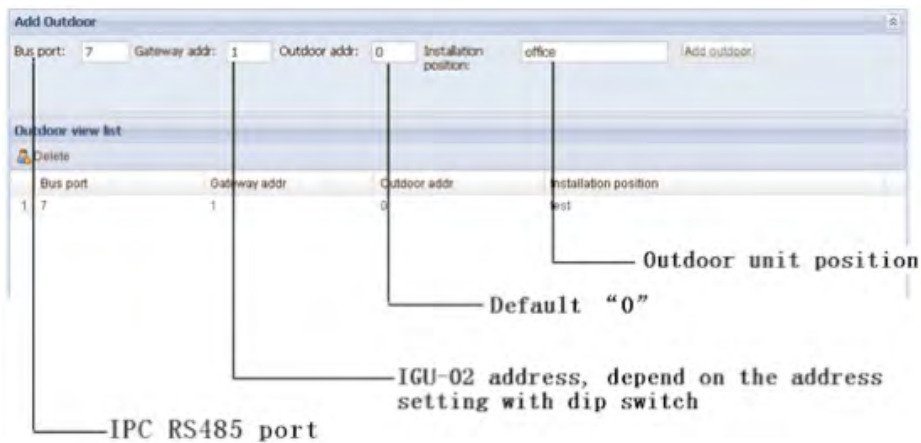


## Parameter display and control interface for indoor unit



## Design interface

### Outdoor unit configuration



## Indoor unit configuration

Bus port	Gatewa...	Central...	Group ...	Building	Floor	Room No.	User name	Model	
1	7	1	0	office	1	101	user1	AC	
2	7	1	2	0	office	1	111111	11111	AC

Translator addr: Port no. and translator no

Central addr: Centralized address of indoor unit, written as "0" if dial code is set as "0" and written as "1" if dial code is set as "1" without 1 being added

Group addr: Written as "0" for remote control or one-to-one wired control and written as a value out of 1-15 for one-to-multiple wired control

Model: Flush-mounted air conditioner Wall-mounted air conditioner Hung air conditioner Windpipe-mounted air.

Selected according to actual model of indoor unit

Building: the building where the indoor unit located

Floor: the floor where the indoor unit located

User name: the room & user where the indoor unit located

Room No.: the room no. where the indoor unit located

Matching between COM ports shown on the industrial personal computer and the bus ports in the software:

COM port shown on industrial personal computer	Corresponding bus port in software	Port function
COM1	COM1	Port for Modbus rtu
COM2	COM2	Empty port
COM3	Bus port 5	Connected with IGU02, at most 20
COM4	Bus port 6	Connected with IGU02, at most 20
COM5	Bus port 7	Connected with IGU02, at most 20
COM6	Bus port 8	Connected with IGU02, at most 20

## Electricity price setting

Fill the electricity prices in peak, valley and normal periods according to local electricity price, and then click the "Set" button to complete the setting.

## Electricity quantity acquisition setting

**Electricity collect:**  
 Auto or not:    
 Manual start date:

For manual acquisition, select the date for acquisition start and then click the "Manual acquisition" button, the system will acquire the electricity consumption quantities of all indoor units from the start date; for automatic acquisition, check the option "whether automatic acquisition is used", the system will automatically acquire the electricity consumption quantities of all indoor units for the previous day in the wee hours every day.

## Pulse setting

**Gateway Parameters**  
 Gateway addr:   
**Pulse setting:**  
 Ammeter pulse quantity per Kwh:  Mutual sensor multiple:

Select the translator to be set, and then fill in the number of pulses per kWh shown on the adopted pulse Ammeter in the field of "pulses/kWh of power ammeter".

For example, if "200 imp/kWh" is shown on a pulse ammeter, it indicates that 200 pulses are outputted from this Ammeter for one kWh of electricity; therefore, the value 200 is written.

For an Ammeter without current transformer, 1 is written for "Multiple of transformer"; for an Ammeter with current transformer, the actual multiple of transformer is written for "Multiple of transformer". For example, if a current ratio 150/5 is shown on a current transformer, the multiple of the transformer is 30. Thus, the value 30 shall be written in the field of "Multiple of transformer".

And then click the "Set" button to complete the setting.

## Setting of peak, valley and normal periods

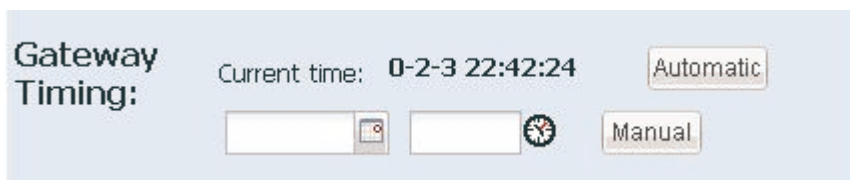
Select the translator to be set first

**Peak,Valley,Normal time setting:**  
 Peak value time:  Valley value time:  Normal value time:

Only one peak value, one valley value and one normal value can be set for one day. The start time of normal value is the end time of peak value, the start time of valley value is the start time of normal value and the start time of peak value is the end time of valley value.

## Time calibration for translator

Select the translator to be set first



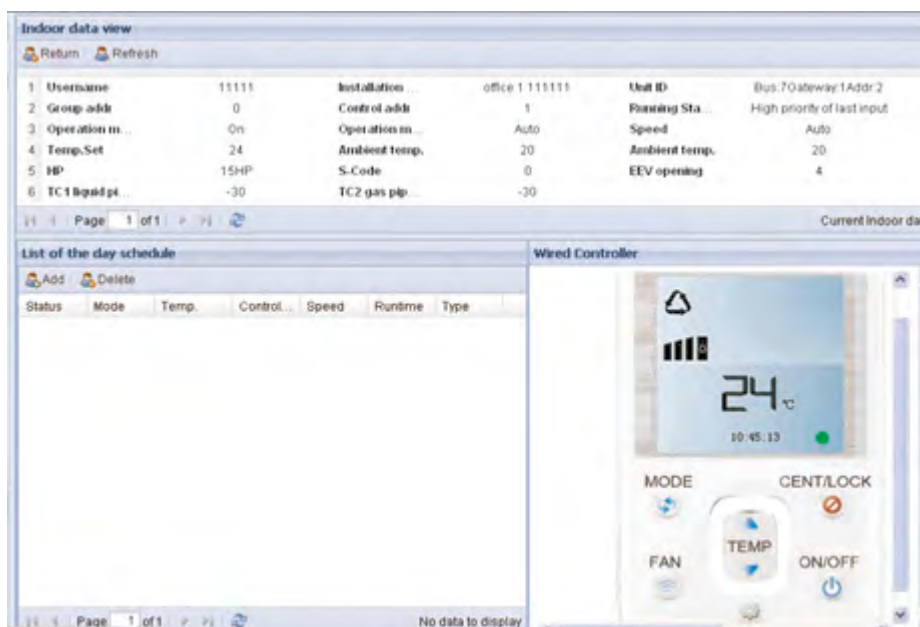
Manual time calibration: Manually select the date and time to be sent to the translator in setting, and then click the "Manual time calibration" button to complete the setting. In automatic time calibration mode, the system will automatically obtain the current date and time of the computer and send them to the translator. For the above pulse setting, setting of peak, valley and normal periods, and time calibration, success prompt will be given as follows after successful operation:



If the operations fail, failure prompt will be given.

## Control

Single unit control



## User control

WEMS3-CAC Management System

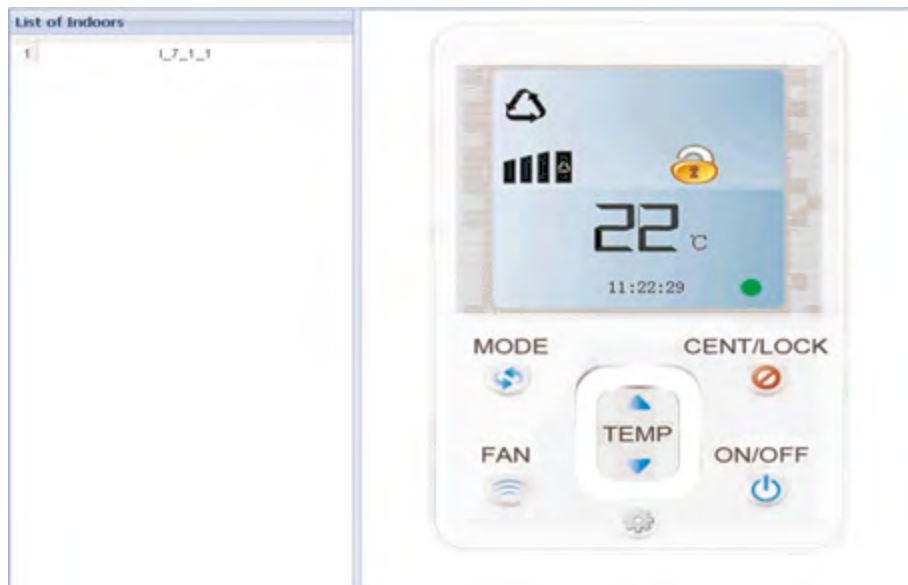
Monitoring objects

- Management System
  - Monitor management
    - Logic general view
    - Physics general view
  - Data sheet
  - System management
    - Outdoor unit collocation
    - Indoor unit collocation
    - Parameter setting
    - Schedule setting
    - Indoor unit distribution
    - User management
    - Quit system




Logic general view

	Indoor1	Indoor2	Indoor3	Indoor4	Indoor5	Indoor6
1	Auto 38°C 101 L_7_1_1 user1 office(1)	Auto 20°C 111111 L_7_1_2 11111 office(1)	Fan -20°C 201 L_7_1_3 user3 office(2)			

Click a user name under the indoor unit no. to enter into the user control interface




## Floor control

Logic general view					
	Indoor1	Indoor2	Indoor3	Indoor4	Indoor5
1	Auto 39°C  101 L_7_1_1 user1 office(1)	Auto 20°C  111111 L_7_1_2 1111 office(1)	Fan -20°C  201 L_7_1_3 user3 office(2)		

Click a floor name to enter into the floor control interface

List of Indoors

1	L_7_1_1
2	L_7_1_2

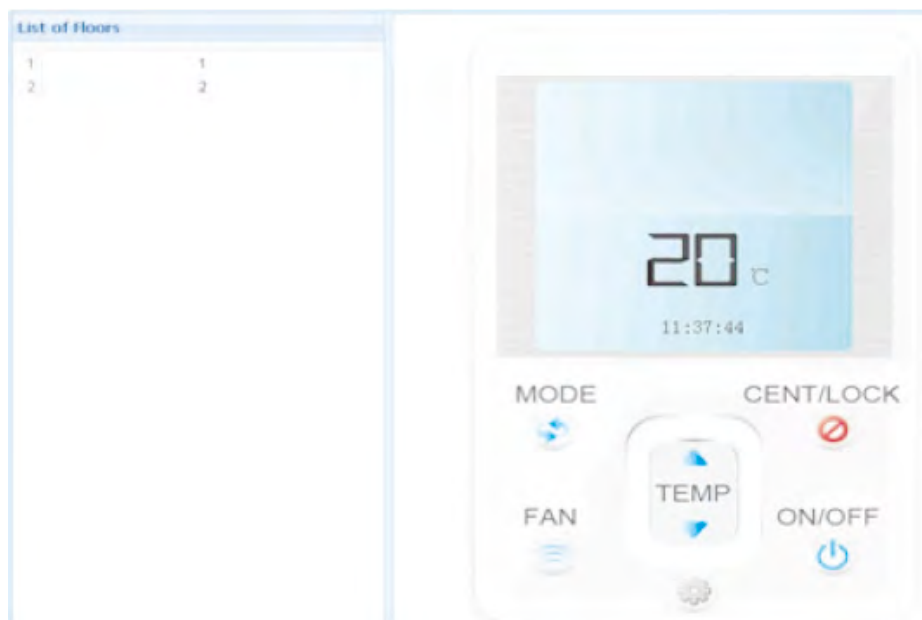


The thermostat interface displays a temperature of 22°C and the time 11:22:29. It features several control buttons: MODE (with a circular arrow icon), FAN (with a fan icon), CENT/LOCK (with a lock icon), TEMP (with up and down arrows), and ON/OFF (with a power icon). A central touch-sensitive area is also present.

## Building control

Logic general view					
	Indoor1	Indoor2	Indoor3	Indoor4	Ind
1	Auto 38°C  101 L_7_1_1 user1 <b>office(1)</b>	Auto 20°C  111111 L_7_1_2 11111 <b>office(1)</b>	Fan -20°C  201 L_7_1_3 user3 <b>office(2)</b>		

Click a building name to enter into the building control interface



The building control can realize united control of air conditioner sets in the whole building.

## Schedule setting

The 'Add Event' dialog box is shown with the following fields and values:

- Title: test3
- Type: Calendar for single unit (dropdown menu is open)
- Building: Calendar for single unit
- Floor: Calendar for user
- User: Calendar for floor
- Indoor: Calendar for building
- Status: [dropdown]
- Temp.: [dropdown]
- Speed: [dropdown]
- Loop: No Cycle
- Run date: 2011-12-04
- Run time: [empty field with a clock icon]

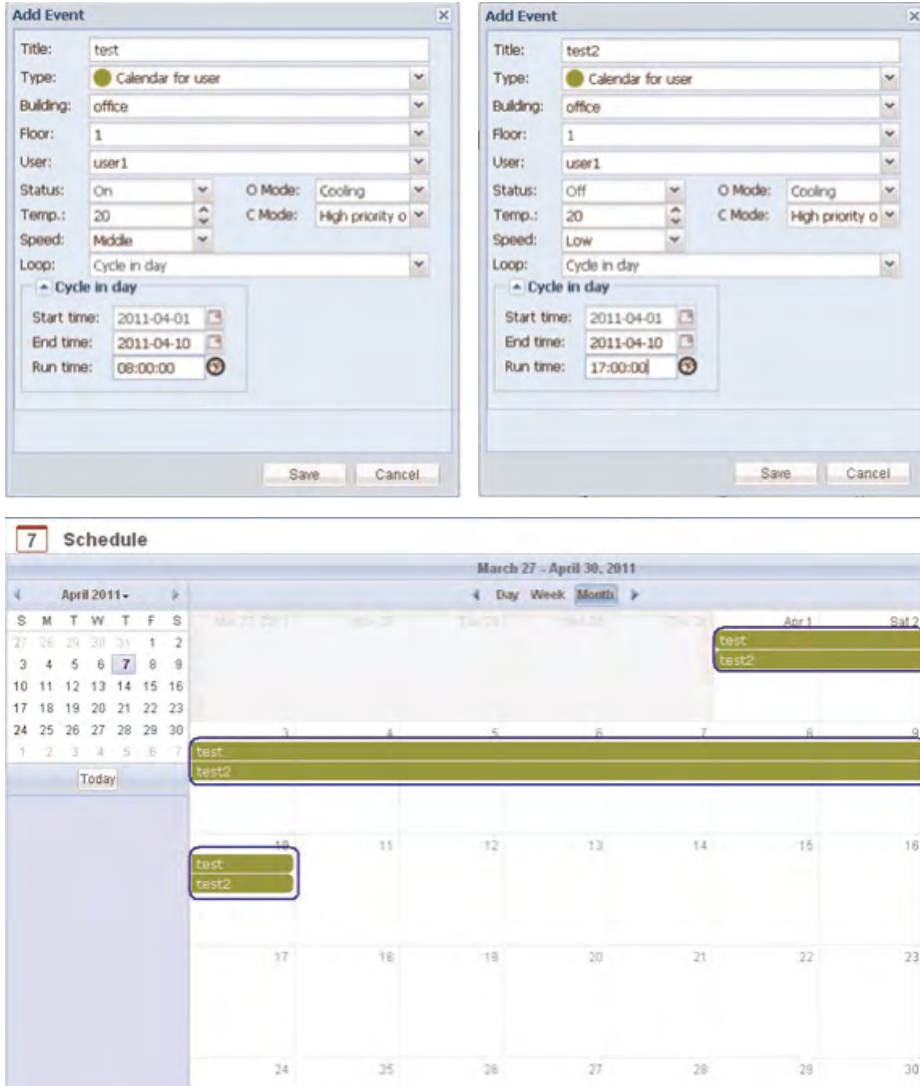
Buttons: Save, Cancel

Schedule setting includes such modes as single indoor unit setting, user setting, floor setting, and building setting, etc.



Example:

Set the user "Secretary Office" to power on the air conditioner at 8:00 and to power off the air conditioner at 17:00 every day from April 1 to April 10.



The test and test2 in the above figure are records after setting; the test is set as "power-on at 8:00" and the test2 is set as "power-off at 17:00".

## User management



System administrator: Has the highest authority

Administrator user: Has high authority, but cannot conduct such operations as equipment information type-in, etc.

General user: Has low authority, and can only monitor the distributed indoor units and cannot conduct other setting operations.

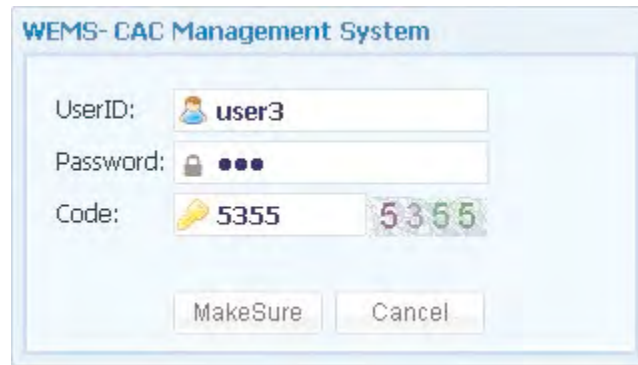
No.	Item	System administrator	Administrator user	General user
1	Logical list	√	√	√
2	Physical list	√	√	√
3	Curve diagram	√	√	√
4	Historical data	√	√	√
5	Charging report form	√	√	×
6	Outdoor unit configuration	√	×	×
7	Indoor unit configuration	√	×	×
8	Parameter setting	√	×	×
9	Schedule setting	√	√	×
10	Indoor unit distribution	√	√	×
11	User management	√	√	×

### Indoor unit distribution

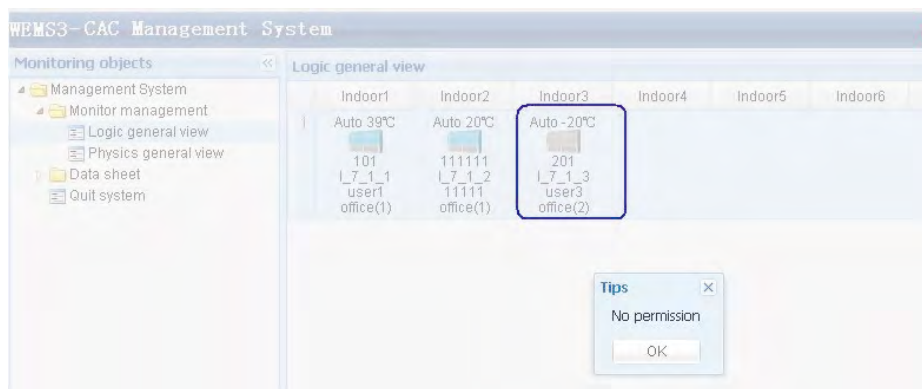
This function is used to distribute indoor units to general users for management



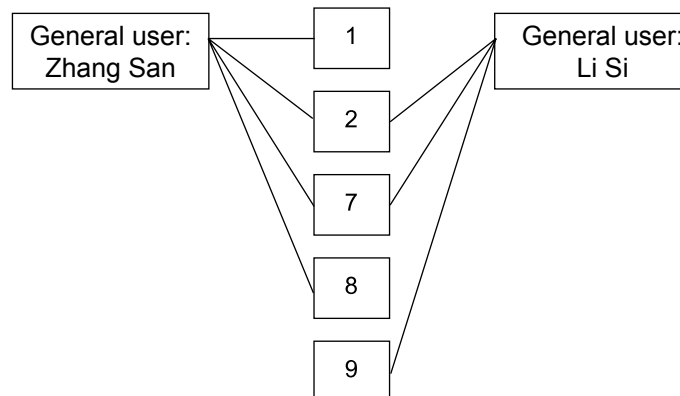
As shown in the figure, select a general user "user3" and distribute three indoor units #1, #2 and #7 to him; and then log in the system by using the user name "User3".



The user "User3" can control indoor units #1, #2 and #7 normally; however, when he tries to control indoor units #8 and #9, he will be notified of "No permission".



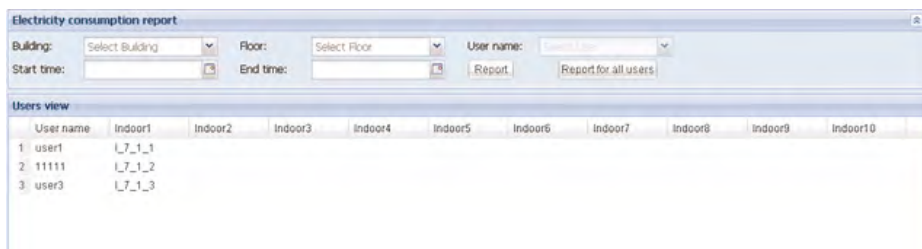
One or more indoor units can be distributed to any of different user names. For example:



## Electricity charge report form

Electricity charge report form creating interface

1. If you want to print all users\* electricity charge report forms, you are not required to select a building name, floor name and user name; you can set the start time and end time and then directly click \*All users\* report form\*, thus you will print out the electricity consumption of all indoor units in the target time period.
2. If you want to print the electricity consumption of a given user, you can operate as follows:



Selecting the building, the floor, and then the user whose report form is to be printed out, setting the start time and end time, and then clicking "Charging report form", you can print out the electricity consumption report form of the target user in the target time period.

Electricity charge report form:

Charging Report Form for Tenant Name (100, Office Building)						
Charging start time: May 1, 2009, end time: May 8, 2009						
Charging unit price (RMB Yuan/kWh): 1.0 (peak), 1.0 (valley), 1.0 (normal); fixed charge: 2.0 (RMB Yuan/pcs. month)						
No.	Bus/ translator/ indoor unit	Physical address	Electricity consumption (peak)	Electricity consumption (valley)	Electricity consumption (normal)	Electricity consumption (normal)
1	1/1/0	Office Building 1 100	0.0	0.0	0.0	2.0

Charging Report Form for Tenant Name (101, Office Building)						
Charging start time: May 1, 2009, end time: May 8, 2009						
Charging unit price (RMB Yuan/kWh): 1.0 (peak), 1.0 (valley), 1.0 (normal); fixed charge: 2.0 (RMB Yuan/pcs. month)						
No.	Bus/ translator/ indoor unit	Physical address	Electricity consumption (peak)	Electricity consumption (valley)	Electricity consumption (normal)	Electricity consumption (normal)
1	1/1/1	Office Building 1 101	0.0	0.0	0.0	2.0

Charging Report Form for Tenant Name (102, Office Building)						
Charging start time: May 1, 2009, end time: May 8, 2009						
Charging unit price (RMB Yuan/kWh): 1.0 (peak), 1.0 (valley), 1.0 (normal); fixed charge: 2.0 (RMB Yuan/pcs. month)						
No.	Bus/ translator/ indoor unit	Physical address	Electricity consumption (peak)	Electricity consumption (valley)	Electricity consumption (normal)	Electricity consumption (normal)
1	1/1/2	Office Building 1 102	0.0	0.0	0.0	2.0

Charging Report Form for Tenant Name (103, Office Building)						
Charging start time: May 1, 2009, end time: May 8, 2009						
Charging unit price (RMB Yuan/kWh): 1.0 (peak), 1.0 (valley), 1.0 (normal); fixed charge: 2.0 (RMB Yuan/pcs. month)						
No.	Bus/ translator/ indoor unit	Physical address	Electricity consumption (peak)	Electricity consumption (valley)	Electricity consumption (normal)	Electricity consumption (normal)
1	1/1/3	Office Building 1 103	0.0	0.0	0.0	2.0

Charging Report Form for Tenant Name (104, Office Building)						
Charging start time: May 1, 2009, end time: May 8, 2009						
Charging unit price (RMB Yuan/kWh): 1.0 (peak), 1.0 (valley), 1.0 (normal); fixed charge: 2.0 (RMB Yuan/pcs. month)						
No.	Bus/ translator/ indoor unit	Physical address	Electricity consumption (peak)	Electricity consumption (valley)	Electricity consumption (normal)	Electricity consumption (normal)
1	1/1/4	Office Building 1 104	0.0	0.0	0.0	2.0

## Design example

Suppose that a five-floor office building is provided with a total of 20 air conditioner sets (4 on each floor). We conduct the following analysis first:

1. One air conditioner system set one IGU02
2. One port can be connected with at most 20 IGU02s; thus two ports are required, one is connected with 15 IGU02s and the other is connected with 5 IGU02s.

Note: When there are fewer IGU02s like this example, these 20 IGU02s can be divided into 15+5, or 5+5+5+5, or other cases to facilitate wiring; however, one port cannot be connected with more than 20 of IGU02s.

The following information shall be known prior to design:

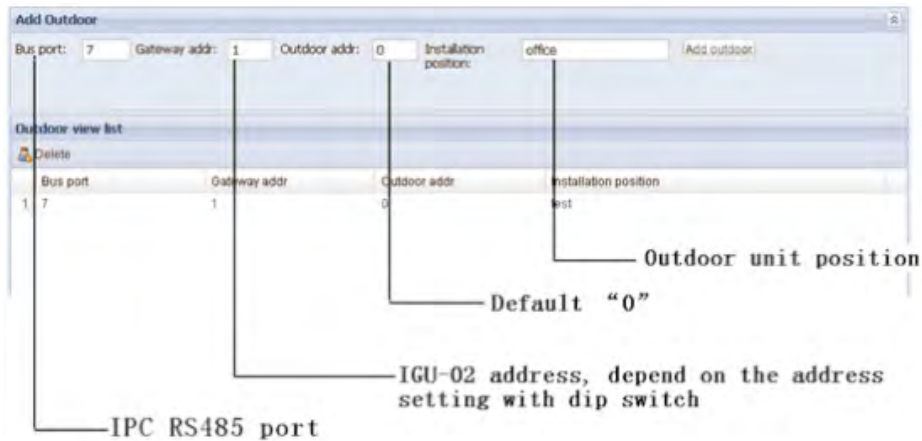
1. What is the centralized address of this indoor unit?
2. What is the room No. (installation location) of this indoor unit?
3. What is the floor for this indoor unit?
4. What is the user name of the room for this indoor unit?
5. What is the address of the translator connected with the air conditioner set to which this indoor unit belongs?
6. What is the port (RS485 bus port) No. for the translator connected with the air conditioner set to which this indoor unit belongs?

The obtained information for the above items is tabulated as follows:

Building name: Office Building

Room corresponding to indoor unit						
Room name	Floor	IGU02 no. for outdoor unit to which indoor unit belongs	Centralized address of indoor unit	Intra-group address of wired controller	Room no.	Machine type
Repair office for signal	--	1	0	0	100	Cassette type
West training room	--	1	1	0	101	Cassette type
East training room	--	1	2	0	102	Cassette type
Material & tool room for signal	--	2	0	0	103	Cassette type
Car test room for signal	--	2	1	0	104	Cassette type
Director office	--	2	2	0	104	Cassette type
Deputy director office	--	2	3	0	105	Cassette type
East shop director office	--	2	4	0	106	Cassette type
West shop director office	--	2	5	1	107	Cassette type
Control room	--	3	0	0	108	Cassette type
Maintenance room	--	3	1	0	109	Cassette type
Maintenance team room	--	3	2	0	110	Cassette type
Vehicle team room	--	3	3	0	111	Cassette type
Power distribution room	--	3	4	0	112	Cassette type
Network room	--	3	5	0	113	Cassette type
Warehouse	--	3	6	0	114	Cassette type
File room	--	3	7	0	115	Cassette type
Conference room1	--	3	8	0	116	Cassette type
Conference room2	--	3	9	1	117	Cassette type

After the above information is known, design can be conducted as follows:  
Set outdoor unit first:



The bus port is set as "1", the translator address is set as "1", the outdoor unit address is fixedly written as "0", and the installation address is office building.

Then, set indoor unit



Translator addr: Port no. and translator no

Central addr: Centralized address of indoor unit, written as "0" if dial code is set as "0" and written as "1" if dial code is set as "1" without 1 being added

Group addr: Written as "0" for remote control or one-to-one wired control and written as a value out of 1-15 for one-to-multiple wired control

Model: Cassette type/ wall mounted type/convertible type/duct type

Selected according to actual model of indoor unit

Building: the building where the indoor unit located

Floor: the floor where the indoor unit located

User name: the room & user where the indoor unit located

Room No.: the room no. where the indoor unit located

The translator address is selected as "bus: 5, and translator address: 1"

For the centralized address, "1" is typed in

For the intra-group address, "0" is typed in

For the building for indoor unit, "office building" is typed in

For the floor for indoor unit, "1" is typed in

For the room #, "100" is typed in

For the user name, "manager room" is typed in

For the machine type, "flush-mounted" is typed in

After the above type-in operations, click "Add indoor unit", the system will prompt successful addition; thus, the setting of one indoor unit is completed.

Notes:

After the equipment information type-in is completed, restart the computer, and carry out reconnection after 3 minutes.

Press and hold the power switch for 20 seconds, the computer will be shut down automatically; touch the power switch slightly, the computer will be started.

## Points for attention in design

1. The corresponding Ammeter for an indoor unit must not be wrong; otherwise, the controlled indoor unit is not the target one and the metered electricity quantity is not of the target indoor unit.

2. After the setting is completed, the software must be shut down, and restart once again; only so, the newly typed-in equipment information can be displayed correctly.

3. Time calculation

After the design of equipment connection is completed, time calibration shall be conducted first so that the time of the translator is consistent with the system time of the computer.

4. Translator pulse setting

The Ammeters from different manufacturers have different number of pulses for one kWh of electricity; download the number of pulses per kWh of electricity into the translator according to the actual status.



## • Requirements for pulse ammeter

### Requirements for pulse Ammeter

#### 1. Three-phase four-line active pulse Ammeter

A. The Ammeter shall be suitable for metering three-phase AC active electric energy at a rated frequency of 50 Hz.

B. The number of pulses outputted by the Ammeter for one kWh of electricity shall be constant.

C. The amplitude of the pulse signal shall be 5 VDC and the width of every pulse shall not be less than 80 ms.

D. The pulse signal from the Ammeter shall be passive, that is, an external pulse signal is required for the Ammeter to generate the required control power supply.

2. Both mechanical and electronic Ammeters shall be used as long as it meets the above requirements. According to the total power input of all the outdoor units, the parameters of Ammeter shall be defined such as rating current.

The wiring of Ammeter includes 3 methods:

- Direct connection;
- Connection via current transformer;
- Connection via current and voltage transformers (seldom used).

Direct connection method has low cost as there are no current and voltage transformers employed. However, if the operation current is out of Ammeter current range, the transformers are required.

3. The recommended ranges of Ammeter for different horsepower of outdoor unit are shown in the following table; if the range of Ammeter is insufficient in direct connection method, transformer method shall be used.

Total horsepower of outdoor units	Range of Ammeter
≤20	10-60A
≤30	20-80A
≤40	30-100A
≤48	30-120A

#### 4. Example of Ammeter used in China

For total 36 Horsepower outdoor units system, If use Ammeter Capacity 30(100)A, 200Pulse/kWh, pulse width 80+/-20ms, Direct

Connection type is feasible.

If use Ammeter Capacity 20(80)A, current transformers are required.



- External Interface

## Port setting

The default setting is modbus ip

MODBUSCOMPORT=1:

If MODBUSCOMPORT=0, it indicates modbus ip interface; if

MODBUSCOMPORT=1, it indicates modbus rtu interface, and the port COM1 is used.

BUSFLAG=1:

If BUSFLAG=1, it indicates that the modbus interface is opened.

## Use of "Putty" tool

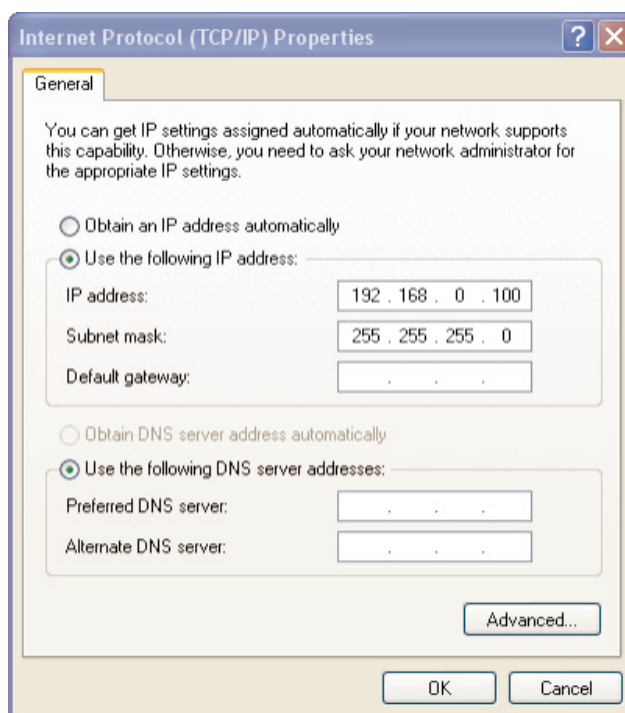
Software name	Software size	Source
PuTTY 0.60	444 k	Huajun Software Park

Download PuTTY 0.60 tool software via internet

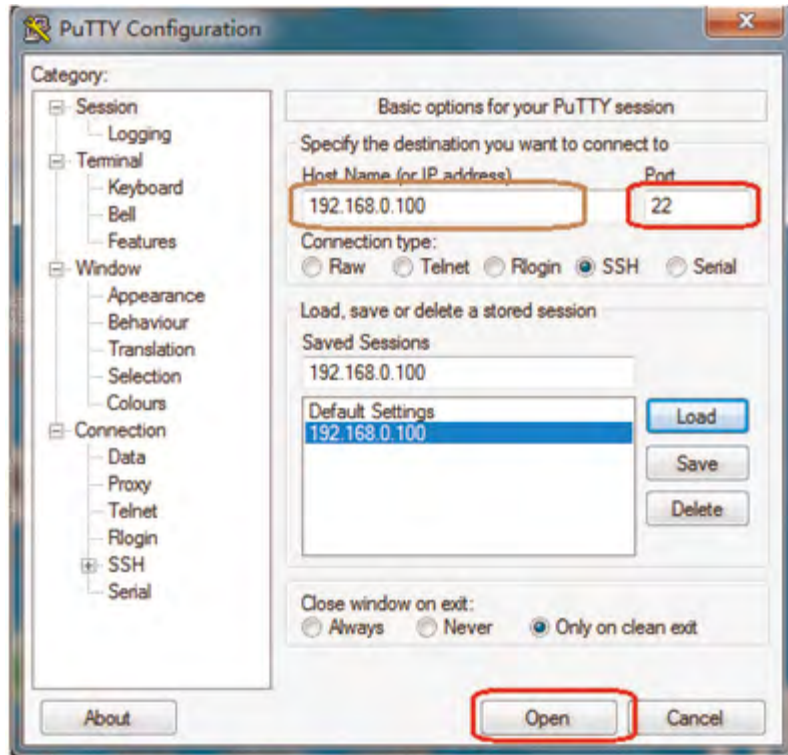
Set the ip of the computer as 192.168.0.x (x is a value other than 100 but within 1-255), which is within the same ip address section as that of the industrial personal computer (the default ip of the industrial personal computer is 192.168.

0.100).

Example:



Connect the computer and the industrial personal computer using a piece of networking cable, start the industrial personal computer, and open the PUTTY tool software.



Type in the ip address of the industrial personal computer in the Host Name field (the default ip of the industrial personal computer is 192.168.0.100), and set the Port field as "22". Click "Open" to open the software. Type in "wingtechs" for "Login as" and press the "Enter" key.



Type in "wingtechs" also for "password"

```
192.168.0.100 - PuTTY
login as: wingtechs
wingtechs@192.168.0.100's password: █
```

The typed-in password is invisible during entering, so do not type in it incorrectly. After typing in the password, press the "Enter" key to enter into the following interface

```
wingtechs@ubuntu: ~
login as: wingtechs
wingtechs@192.168.0.100's password:
Welcome to Ubuntu 11.04 (GNU/Linux 2.6.38-8-generic-pae i686)

 * Documentation:  https://help.ubuntu.com/

System information as of Fri May 20 09:05:45 CST 2011

System load:  0.1                Processes:    79
Usage of /:   0.4% of 291.45GB    Users logged in:  0
Memory usage: 6%                IP address for eth0: 192.168.0.100
Swap usage:  0%

Graph this data and manage this system at https://landscape.canonical.com/
Last login: Thu May 19 11:01:17 2011 from 192.168.0.2
wingtechs@ubuntu:~$ █
```

Type in the command "sudo -i" and then press the "Enter" key (Note that there is a space following sudo.)

```
wingtechs@ubuntu:~$ sudo -i
[sudo] password for wingtechs: █
```

Type in the password "wingtechs" again, and then press the "Enter" key to enter into the # root directory.

```
root@ubuntu:~#
```

Type in the command "cd /var/lib/tomcat6/webapps/wems3-haiersys/WEB-INF/classes" and press the "Enter" key (Note the space and upper and lower cases) to switch over to the "classes" directory.

```
root@ubuntu:~# cd /var/lib/tomcat6/webapps/wems3/WEB-INF/classes █
```

Afterwards, type in "ls -l" and press the "Enter" key (Note the space).

```
drwxr-xr-x 4 root root 4096 2011-05-18 19:00 com
-rwxr-xr-x 1 root root 2511 2010-09-07 18:10 log4j.properties
-rwxr-xr-x 1 root root 48350 2010-07-26 11:01 MessageResources.properties
-rwxr-xr-x 1 root root 280 2011-05-17 14:27 sysinfo.properties
root@ubuntu:/var/lib/tomcat6/webapps/wems3/WEB-INF/classes# █
```

Four files under the "classes" directory will be displayed as shown in the figure. Type in "vi sysinfo.properties" and press the "Enter" key.

```

root@wingtechs: /var/lib/tomcat6/webapps/weas3/WEB-INF/cla...
dbdriver=com.mysql.jdbc.Driver
dbname=mysql
dbport=3306
dbhost=localhost
dbalias=haierdb
dbuser=wing
dbpasswd=wing
LANGUAGE=EN
RETRYTIMES=3
NEXTINTERVAL=1000
SAVEINTERVAL=10
Modbuscontrol_interval
INTERVAL=300
getEnergy_interval
ENERGYINTERVAL=1000

Modbus
MODBUSCOMPORT=1
BUSFLAG=run,stop
BUSFLAG=1

BACNET_FLAG=run,stop
BACNET_FLAG=1

```

Enter into the file "sysinfo.properties" edit interface.

Use "Up", "Down", "Lef" and "Right" keys to move the cursor to the "MODBUSCOMPORT=1" place; if MODBUSCOMPORT=1, it indicates modbus rtu interface, and the port COM1 is used; if MODBUSCOMPORT=0, it indicates modbus ip interface, and the port LAN1 is used (the default ip is 192.168.0.100).

Change: move the cursor to "1", and click "i", "insert" will be displayed in the interface; delete "1" and type in "0".

```

root@wingtechs: /var/lib/tomcat6/webapps/weas3/WEB-INF/cla...
dbdriver=com.mysql.jdbc.Driver
dbname=mysql
dbport=3306
dbhost=localhost
dbalias=haierdb
dbuser=wing
dbpasswd=wing
LANGUAGE=EN
RETRYTIMES=3
NEXTINTERVAL=1000
SAVEINTERVAL=10
Modbuscontrol_interval
INTERVAL=300
getEnergy_interval
ENERGYINTERVAL=1000

Modbus
MODBUSCOMPORT=0
BUSFLAG=run,stop
BUSFLAG=1

BACNET_FLAG=run,stop
BACNET_FLAG=1
-- INSERT --

```

Press "ESC" key, and then type in ":" and "wq".

```

root@wingtechs: /var/lib/tomcat6/webapps/wems3/WEB-INF/cla...
#jdk1.6ver=6066.mysql.jdbc.Driver
#database=mysql
#ipport=3306
#dbhost=localhost
#database=haiercdb
#username=wing
#password=wing
#LANGUAGE=en
#STARTUPINTERVAL=3
#SHUTDOWNINTERVAL=3000
#SAVEINTERVAL=10
#managementurl=http://localhost:8080/manager/html
#INTERVAL=3000
#webManagerUrl=http://localhost:8080/manager/html
#WEBMGTINTERVAL=3000

#Shutdown
#MODBUSCOMPORT=0
#MODBUSADDR=192.168.0.100
#MODBUSBAG=1

#MODBUS_FLAG=modbusrtu
#MODBUS_FLAG=1
:mg

```

Press the "Enter" key.

```

root@wingtechs: /var/lib/tomcat6/webapps/wems3/WEB-INF/cla...
Memory usage: 7%          IP address for eth0: 192.168.0.100
Swap usage: 0%

Graph this data and manage this system at https://landscape.canonical.com/
Last login: Thu Mar 15 13:56:38 2012 from 192.168.0.9
wingtechs@wingtechs:~$ sudo -i
[sudo] password for wingtechs:
root@wingtechs:~# cd /var/lib/tomcat6
root@wingtechs:/var/lib/tomcat6# cd webapps/wems3
-bash: cd: webapps/wems3-haiersy: No such file or directory
root@wingtechs:/var/lib/tomcat6# cd webapps
root@wingtechs:/var/lib/tomcat6/webapps# cd wems3
root@wingtechs:/var/lib/tomcat6/webapps/wems3# cd WEB-INF
root@wingtechs:/var/lib/tomcat6/webapps/wems3/WEB-INF# cd classes
root@wingtechs:/var/lib/tomcat6/webapps/wems3/WEB-INF/classes
total 20
drwxr-xr-x 4 root root 4096 2011-07-28 10:58 com
-rwxr-xr-x 1 root root 2511 2010-09-07 18:10 log4j.properties
-rwxr-xr-x 1 root root 1305 2011-09-14 14:40 MessageResources_en.properties
-rwxr-xr-x 1 root root 1737 2011-07-20 15:07 MessageResources.properties
-rwxr-xr-x 1 root root 440 2012-03-15 10:22 sysinfo.properties
root@wingtechs:/var/lib/tomcat6/webapps/wems3/WEB-INF/classes# vi sysinfo
fo.properties
root@wingtechs:/var/lib/tomcat6/webapps/wems3/WEB-INF/classes#

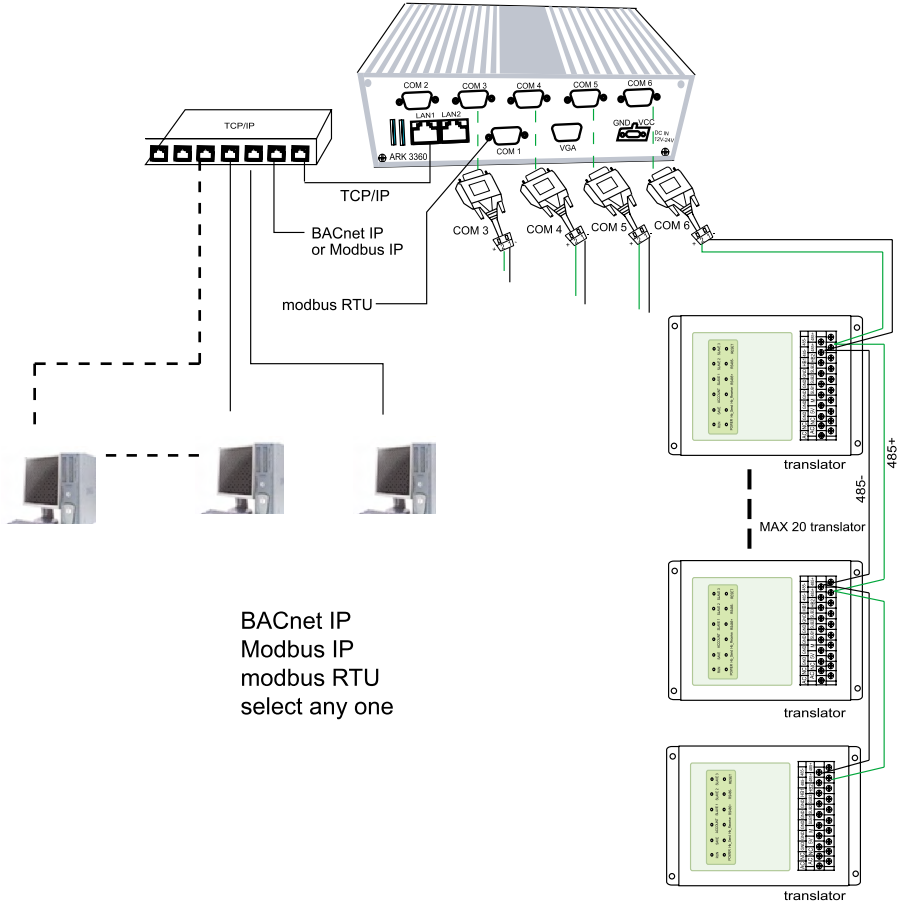
```

Return to the "classes" directory; type in "reboot" and press the "Enter" key, the industrial personal computer will be restarted.

Thus, modbus rtu is changed into modbus ip.

If you want to change modbus ip into modbus rtu, you can do it only by changing MODBUSCOMPORT=0 into MODBUSCOMPORT=1 according to the above steps.

The third party port diagram



## Explanation of register address table

1. Composition of slave id:

Bus no.\*20+translator address.

Example: the bus no. is 5, and the translator address is 1, thus, the slave id is  $5*20+1=101$ .

2. Read the use function code 03.

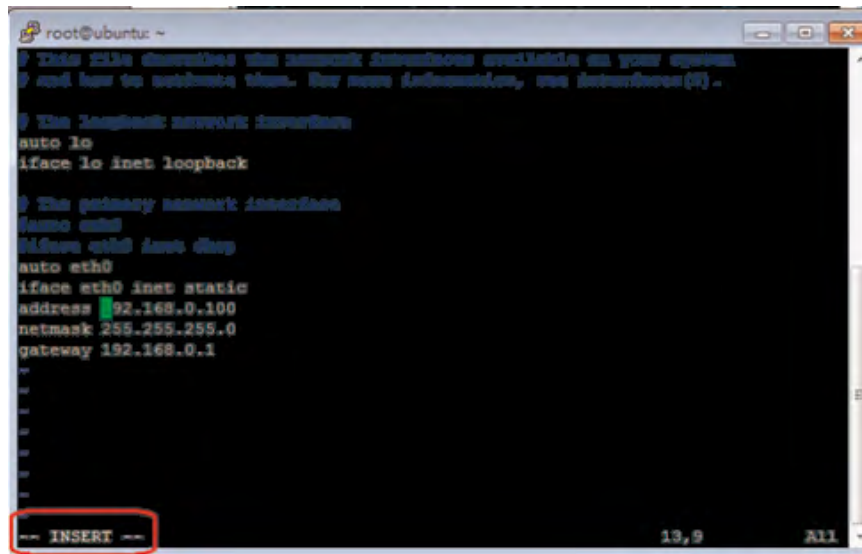
	Address		
Switch on/off of indoor unit #1	101	1 for switch-on 0 for switch-off	Read/write
Switch on/off of indoor unit #2	102		Read/write
-----	-----		Read/write
Switch on/off of indoor unit #39	139		Read/write
Switch on/off of indoor unit #40	140		Read/write
Operating mode of indoor unit #1	201	0:auto; 1: fan only; 2 cooling; 3: dehumidifying; 4:heating	Read/write
Operating mode of indoor unit #2	202		Read/write
-----	-----		Read/write
Operating mode of indoor unit #39	239		Read/write
Operating mode of indoor unit #40	240		Read/write
Set temperature of indoor unit #1	301	16-30	Read/write
Set temperature of indoor unit #2	302		Read/write
-----	-----		Read/write
Set temperature of indoor unit #39	339		Read/write
Set temperature of indoor unit #40	340		Read/write
Control mode of indoor unit #1	401	0, 1: Final command takes precedence; 2: Centralized control; 3: Forced control	Read/write
Control mode of indoor unit #2	402		Read/write
-----	-----		Read/write
Control mode of indoor unit #39	439		Read/write
Control mode of indoor unit #40	440		Read/write
Actual Air speed of indoor unit #1	501	3: High speed; 2: Medium speed; 1: Low speed; 0: Automatic	Read/write
Actual Air speed of indoor unit #2	502		Read/write
-----	-----		Read/write
Actual Air speed of indoor unit #39	539		Read/write
Actual Air speed of indoor unit #40	540		Read/write



	Address		
Failure code of indoor unit #1	601		Read/only
Failure code of indoor unit #2	602		Read/only
-----	-----		Read/only
Failure code of indoor unit #39	639		Read/only
Failure code of indoor unit #40	640		Read/only
Indoor ambient temperature for indoor unit #1	701		Read/only
Indoor ambient temperature for indoor unit #2	702		Read/only
-----	-----		Read/only
Indoor ambient temperature for indoor unit #39	739		Read/only
Indoor ambient temperature for indoor unit #40	740		Read/only
Gas pipe temperature of indoor unit #1	801		Read/only
Gas pipe temperature of indoor unit #2	802		Read/only
-----	-----		Read/only
Gas pipe temperature of indoor unit #39	839		Read/only
Gas pipe temperature of indoor unit #40	840		Read/only
Liquid pipe temperature of indoor unit #1	901		Read/only
Liquid pipe temperature of indoor unit #2	902		Read/only
-----	-----		Read/only
Liquid pipe temperature of indoor unit #39	939		Read/only
Liquid pipe temperature of indoor unit #40	940		Read/only



Move the cursor to the ip address place by using "Up", "Down", "Left" and "Right" keys, and click "i",



```

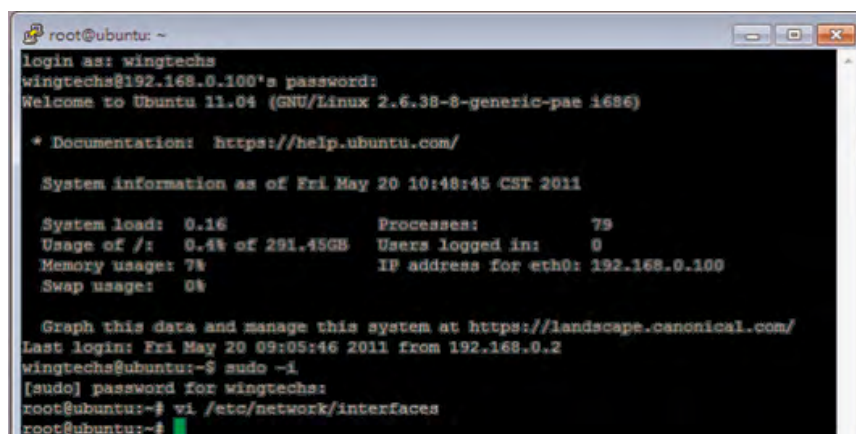
root@ubuntu: ~
# This file describes the network interfaces available on your system
# and how to activate them. For more information, see interfaces(8).

# The loopback network interface
auto lo
iface lo inet loopback

# The primary network interface
#auto eth0
#iface eth0 inet dhcp
auto eth0
iface eth0 inet static
address 192.168.0.100
netmask 255.255.255.0
gateway 192.168.0.1
-- INSERT --
13,9 All

```

"INSERT" will appear on the bottom of the interface; change the ip address to the target one, and then press the "ESC" key and type in ":" and "wq"; afterwards, press the "Enter" key



```

root@ubuntu: ~
login as: wingtechs
wingtechs@192.168.0.100's password:
Welcome to Ubuntu 11.04 (GNU/Linux 2.6.38-8-generic-pae i686)

* Documentation:  https://help.ubuntu.com/

System information as of Fri May 20 10:48:45 CST 2011

System load: 0.16          Processes:           79
Usage of /:  0.4% of 291.45GB  Users logged in:    0
Memory usage: 7%          IP address for eth0: 192.168.0.100
Swap usage:  0%

Graph this data and manage this system at https://landscape.canonical.com/
Last login: Fri May 20 09:05:46 2011 from 192.168.0.2
wingtechs@ubuntu:~$ sudo -i
[sudo] password for wingtechs:
root@ubuntu:~# vi /etc/network/interfaces
root@ubuntu:~#

```

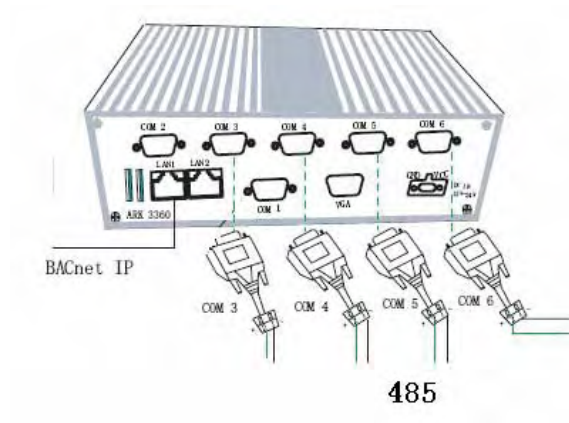
#### Notes:

After the ip is changed, the ip for connecting the software and the modbus ip interface is changed to the new ip address. Thus, the default ip 192.168.0.100 cannot be used.

Remember the new ip address. Do not forget it to avoid connection failure.

- Connection

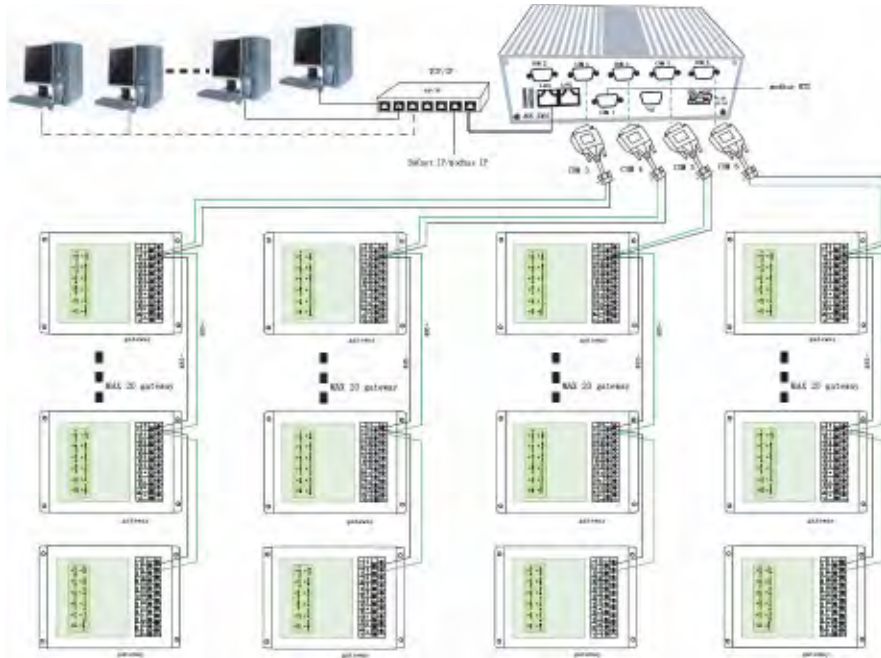
1. Connection Diagram



4xRS-485 ports: COM3,COM4,COM5,COM6

NO.	Physical Port number	Software Port number	Software Port number
1	COM3	COM5	When connect the cable to COM3, select COM5 in software during configuring
2	COM4	COM6	When connect the cable to COM4, select COM5 in software during configuring
3	COM5	COM7	When connect the cable to COM4, select COM5 in software during configuring
4	COM6	COM8	When connect the cable to COM6, select COM5 in software during configuring

## System Connection Diagram



HCM-03 has its own monitoring interface, which can be visited by browser like Google Chrome, Firefox etc. One RJ-45 cable is needed to connect one PC to the LAN1 of HCM-03. From this Human-Computer Interaction interface, you can input the information and monitor the system.

BACnet IP: 192.168.0.100 (default)

Log name: admin

Password: admin

The maximum number of indoor units controlled by one control system should be 256.

**Caution:**

- a. When connect BMS host computer with HCM-03 by BACnet IP, the IP of HCM-03 must be same network segment as the IP of the host.
- b. When BACnet is used, the indoor address must begin from No.1, No.0 is forbidden. Referenced by the followed table.

[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	Address of indoor unit
--	0	0	0	0	0	0	0	No.0 is forbidden
--	0	0	0	0	0	0	1	No.1

## Function description

This device is installed between Building Management System (BMS) with BACnet® and JCI Amazon VRF system, Which can integrate the BMS and Air Conditioning system.

After installed and configured this device and the JCI Amazon VRF system, the BMS can visit and operate every indoor unit connected.

### 1. Information Collection

This device provides the information collection functions of BMS on the JCI Amazon VRF systems, which can get indoor units state data of the air conditioning system.

### 2. Operation and Control

This device provides the control functions of BMS on the JCI Amazon VRF systems, the indoor units can be set the air conditioning system working states, including "set the operation mode", "set the wind speed," set temperature ", " switch on/off machine ", " control mode ", etc. By modifying the corresponding BACnet objects, you can set the air conditioner state specific object information see the corresponding list of objects from BMS.

#### Caution:

The operation of the air conditioning can not be too frequent, in order to avoid the running state of the air conditioning system is inconsistent with the desired state of operation.

Please keep in more than 20 seconds time interval between the operation of different objects in the same air conditioning units, in order to ensure the timeliness and effectiveness of air conditioning state change.

## Configuration Description

Before use, the equipment must be a certain configuration settings, or it can not provide a reservation function. Users can open the browser, enter "IP adrees:8080/wems3", through web access make the settings.

For example, 192.168.0.100:8080/wems3

### 1. Security Settings

Default administrator name: admin, password : admin, default IP: 192.168.0.100

### 2. Network Settings

The controller has three Ethernet network interface, corresponding to eth0, eth1, and eth2. Only of eth0 is available, as a BACnet / IP network interface.

Eth1 and eth2 is not available.

The IP address of ETH0 port is set as"192.168.0.100" in the factory.

Please modify to proper web address. Please contact with local network administrators for available web address.

#### Caution:

The IP of HCM-03 must be same network segment as the IP of the host, or the device will work correctly.

## • Objects Lists

For the indoor and outdoor units of the system, the devices provide a variety of objects list. The identification of these air-conditioning equipment and BACnet object generation is automatic.

### 1. Indoor units objects lists

This device provides the below BACnet objects in the table for the connected air conditioning system, which can be used for BMS with BACnet.

No.	Contents
1	Device information
2	Run mode
3	Fan states
4	Preset Temperature
5	Indoor temperature
6	Indoor OnOFF
7	Indoor Control Mode
8	Indoor Error Code

The specific circumstances of the corresponding objects, see the following tables:

### 2. Device Information

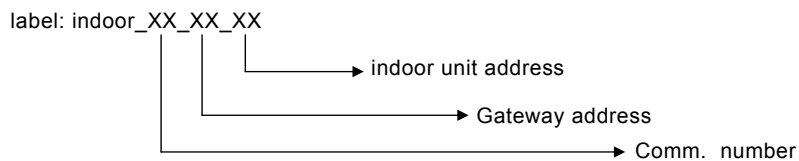
Property Identifier	Property Datatype	RW	Description
Object_Identifier	BACne Object Identifier	R	
Object_Name	Character String	R	HCM-03
Object_Type	BACnet Object Type	R	DEVICE
System_Status	BACnet Device Status	R	
Vendor_Name	Character String	R	
Vendor_Identifier	Unsigned 16	R	
Model_Name	Character String	R	
Firmware_Revision	Character String	R	
Application_Software_Version	Character String	R	
Location	Character String	O	
Description	Character String	O	
Protocol_Version	Unsigned	R	
Protocol_Revision	Unsigned	R	
Protocol_Services_Supported	BACnet Services Supported	R	
Protocol_Object_Types_Supported	BACnet Object Types Supported	R	
Object_List	BACnet ARRAY[N] of BACnet Object Identifier	R	
Structured_Object_List	BACnet ARRAY[N] of BACnet Object Identifier	O	
Max_APDU_Length_Accepted	Unsigned	R	
Segmentation_Supported	BACnet Segmentation	R	
Max_Segments_Accepted	Unsigned	O	

Property Identifier	Property Datatype	RW	Description
VT_Classes_Supported	List of BACnet VT Class	O	
Active_VT_Sessions	List of BACnet VT Session	O	
Local_Time	Time	O	
Local_Date	Date	O	
UTC_Offset	INTEGER	O	
Daylight_Savings_Status	BOOLEAN	O	
APDU_Segment_Timeout	Unsigned	R	
APDU_Timeout	Unsigned	R	
Number_Of_APDU_Retries	Unsigned	O	
List_Of_Session_Keys	List of BACnet Session Key	O	
Time_Synchronization_Recipients	List of BACnet Recipient	O	
Max_Master	Unsigned(1..127)	O	
Max_Info_Frames	Unsigned	O	
Device_Address_Binding	List of BACnet Address Binding	O	
Database_Revision	Unsigned	R	
Configuration_Files	BACnet ARRAY[N] o BACnet Object Identifier	R	
Last_Restore_Time	BACnet Time Stamp	O	
Backup_Failure_Timeout	Unsigned 16	O	
Active_COV_Subscriptions	List of BACnet COV Subscription	O	
Slave_Proxy_Enable	Unsigned	O	
Manual_Slave_Address_Binding	List of BACnet Address Binding	O	
Auto_Slave_Discovery	BACnet ARRAY[N] of BOOLEAN	O	
Slave_Address_Binding	List of BACnet Address Binding	O	
Last_Restart_Reason	BACnet Restart Reason	O	
Time_Of_Device_Restart	BACnet Time Stamp	O	
Restart_Notification_Recipients	BACnet Binary PV	O	
UTC_Time_Synchronization_Recipients	List of BACnet Recipient	O	
Time_Synchronization_Interval	Unsigned	O	
Align_Intervals	BOOLEAN	O	
Interval_Offset	Unsigned	O	
Profile_Name	CharacterString	O	



### 3. Indoor Information

Property Identifier	Property Datatype	RW	Description
Object_Identifier	BACne Object Identifier	R	
Object_Name	Character String	R	indoor_XX_XX_XX
Object_Type	BACnet Object Type	R	GROUP
Description	Character String	O	
List_Of_Group_Members	List of Read Access Specification	R	
Present_Value	List of Read Access Result	R	
Profile_Name	Character String	O	



### 4. Indoor On/OFF (MSI)

Property Identifier	Property Datatype	RW	Description
Object_Identifier	BACne Object Identifier	R	
Object_Name	Character String	R	Indoor_OnOFF_XX_XX_XX
Object_Type	BACnet Object Type	R	MULTI-STATE_INPUT
Present_Value	Unsigned	R	
Description	Character String	O	Indoor On OFF
Device_Type	Character String	O	
Status_Flags	BACnet Status Flags	R	
Event_State	BACnet Event State	R	
Reliability	BACnet Reliability	O	
Out_Of_Service	BOOLEAN	R	Always False
Number_Of_States	Unsigned	R	4
State_Text	BACnet ARRAY[N] of Character String	O	1:Off 2:On 3:AC Error 4:Offline
Time_Delay	Unsigned	O	
Notification_Class	Unsigned	O	
Alarm_Value	List of Unsigned	O	
Event_Enable	List of Unsigned	O	
Event_Enable	BACnet Event Transition Bits	O	
Acked_Transitions	BACnet EventTransition Bits	O	
Notify_Type	BACnet Notify Type	O	
Event_Time_Stamps	BACnet ARRAY[3] of BACnet Time Stamp	O	
Profile_Name	Character String	O	

## 5. Indoor On/OFF (MSO)

Property Identifier	Property Datatype	RW	Description
Object_Identifier	BACne Object Identifier	R	
Object_Name	Character String	R	Indoor_OnOFF_XX_XX_XX
Object_Type	BACnet Object Type	R	MULTI-STATE_INPUT
Present_Value	Unsigned	R	
Description	Character String	O	Indoor On OFF
Device_Type	Character String	O	
Status_Flags	BACnetStatus Flags	R	
Event_State	BACnet Event State	R	
Reliability	BACnet Reliability	O	
Out_Of_Service	BOOLEAN	R	Always False
Number_Of_States	Unsigned	R	2
State_Text	BACnet ARRAY[N] of Character String	O	1:Off 2:On
Time_Delay	Unsigned	O	
Notification_Class	Unsigned	O	
Alarm_Value	List of Unsigned	O	
Event_Enable	List of Unsigned	O	
Event_Enable	BACnet Event Transition Bits	O	
Acked_Transitions	BACne tEvent Transition Bits	O	
Notify_Type	BACnet Notify Type	O	
Event_Time_Stamps	BACnet Notify Type	O	
Event_Time_Stamps	BACnet ARRAY[3] of BACnet Time Stamp	O	
Profile_Name	Character String	O	

## 6. Indoor Work Mode (MSI)

Property Identifier	Property Datatype	RW	Description
Object_Identifier	BACnetObjectIdentifier	R	
Object_Name	CharacterString	R	Indoor_Mode_XX_XX_XX
Object_Type	BACnetObjectType	R	MULTI-STATE_OUTPUT
Present_Value	Unsigned	R	
Description	CharacterString	O	Indoor Work Mode
Device_Type	CharacterString	O	
Status_Flags	BACnetStatusFlags	R	
Event_State	BACnetEventState	R	
Reliability	BACnetReliability	O	
Out_Of_Service	BOOLEAN	R	Always False
Number_Of_States	Unsigned	R	6
State_Text	BACnetARRAY[N] of CharacterString	O	1:Auto 2:Fan 3:Cool 4: Dry 5:Heat 6:Other
Time_Delay	Unsigned	O	
Notification_Class	Unsigned	O	
Alarm_Value	List of Unsigned	O	
Event_Enable	List of Unsigned	O	
Event_Enable	BACnetEventTransitionBits	O	
Acked_Transitions	BACnetEventTransitionBits	O	
Notify_Type	BACnetNotifyType	O	
Event_Time_Stamps	BACnetNotifyType	O	
Event_Time_Stamps	BACnetARRAY[3] ofBACnetTimeStamp	O	
Profile_Name	CharacterString	O	

## 7. Indoor Work Mode (MSO)

Property Identifier	Property Datatype	RW	Description
Object_Identifier	BACnetObjectIdentifier	R	
Object_Name	CharacterString	R	Indoor_Mode_XX_XX_XX
Object_Type	BACnetObjectType	R	MULTI-STATE_OUTPUT
Present_Value	Unsigned	R	
Description	CharacterString	O	Indoor Work Mode
Device_Type	CharacterString	O	
Status_Flags	BACnetStatusFlags	R	
Event_State	BACnetEventState	R	
Reliability	BACnetReliability	O	
Out_Of_Service	BOOLEAN	R	Always False
Number_Of_States	Unsigned	R	6
State_Text	BACnetARRAY[N] of CharacterString	O	1:Auto 2:Fan 3:Cool 4: Dry 5:Heat 6:Other
Priority_Array	BACnetPriorityArray	R	
Relinquish_Default	Unsigned	R	
Time_Delay	Unsigned	O	
Notification_Class	Unsigned	O	
Feedback_Value	Unsigned	O	
Event_Enable	BACnetEventTransitionBits	O	
Acked_Transitions	BACnetEventTransitionBits	O	
Notify_Type	BACnetNotifyType	O	
Event_Time_Stamps	BACnetARRAY[3] ofBACnetTimeStamp	O	
Profile_Name	CharacterString	O	

## 8. Indoor Fan Speed (MSI)

Property Identifier	Property Datatype	RW	Description
Object_Identifier	BACnetObjectIdentifier	R	
Object_Name	CharacterString	R	Indoor_FanSpeed_XX_XX_XX
Object_Type	BACnetObjectType	R	MULTI-STATE_OUTPUT
Present_Value	Unsigned	W	
Description	CharacterString	O	Indoor Fan Speed
Device_Type	CharacterString	O	
Status_Flags	BACnetStatusFlags	R	
Event_State	BACnetEventState	R	
Reliability	BACnetReliability	O	
Out_Of_Service	BOOLEAN	R	Always False
Number_Of_States	Unsigned	R	5
State_Text	BACnetARRAY[N] of CharacterString	O	1:Auto 2: Low 3:Normal 4: High 5:Other
Priority_Array	BACnetPriorityArray	R	
Relinquish_Default	Unsigned	R	
Time_Delay	Unsigned	O	
Notification_Class	Unsigned	O	
Feedback_Value	Unsigned	O	
Event_Enable	BACnetEventTransitionBits	O	
Acked_Transitions	BACnetEventTransitionBits	O	
Notify_Type	BACnetNotifyType	O	
Event_Time_Stamps	BACnetARRAY[3] ofBACnetTimeStamp	O	
Profile_Name	CharacterString	O	

## 9. Indoor Fan Speed (MSO)

Property Identifier	Property Datatype	RW	Description
Object_Identifier	BACnetObjectIdentifier	R	
Object_Name	CharacterString	R	Indoor_FanSpeed_XX_XX_XX
Object_Type	BACnetObjectType	R	MULTI-STATE_OUTPUT
Present_Value	Unsigned	W	
Description	CharacterString	O	Indoor Fan Speed
Device_Type	CharacterString	O	
Status_Flags	BACnetStatusFlags	R	
Event_State	BACnetEventState	R	
Reliability	BACnetReliability	O	
Out_Of_Service	BOOLEAN	R	Always False
Number_Of_States	Unsigned	R	5
State_Text	BACnetARRAY[N] of CharacterString	O	1:Auto 2: Low 3:Normal 4: High 5:Other
Priority_Array	BACnetPriorityArray	R	
Relinquish_Default	Unsigned	R	
Time_Delay	Unsigned	O	
Notification_Class	Unsigned	O	
Feedback_Value	Unsigned	O	
Event_Enable	BACnetEventTransitionBits	O	
Acked_Transitions	BACnetEventTransitionBits	O	
Notify_Type	BACnetNotifyType	O	
Event_Time_Stamps	BACnetARRAY[3] ofBACnetTimeStamp	O	
Profile_Name	CharacterString	O	

## 10. Indoor Set Temperature (AI)

Property Identifier	Property Datatype	RW	Description
Object_Identifier	BACneObjectIdentifier	R	
Object_Name	CharacterString	R	Indoor_SetTemp_XX_XX_XX
Object_Type	BACnetObjectType	R	ANALOG_VALUE
Present_Value	REAL	W	
Description	CharacterString	O	Indoor Temperature Of Set
Device_Type	CharacterString	O	
Status_Flags	BACnetStatusFlags	R	
Event_State	BACnetEventState	R	
Reliability	BACnetReliability	O	
Out_Of_Service	BOOLEAN	R	ALWAYS FALSE
Update_Interval	Unsigned	O	
Units	BACnetEngineeringUnits	R	
Min_Pres_Value	REAL	O	
Max_Pres_Value	REAL	O	
Resolution	REAL	O	
COV_Increment	REAL	O	
Time_Delay	Unsigned	O	1.0 Fixed
Notification_Class	Unsigned	O	
High_Limit	REAL	O	
Low_Limit	REAL	O	
Deadband	REAL	O	
Limit_Enable	BACnetLimitEnable	O	
Event_Enable	BACnetEventTransitionBits	O	
Acked_Transitions	BACnetEventTransitionBits	O	
Notify_Type	BACnetNotifyType	O	
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp		
Profile_Name	CharacterString	O	

## 11. Indoor Set Temperature (Ao)

Property Identifier	Property Datatype	RW	Description
Object_Identifier	BACnetObjectIdentifier	R	
Object_Name	CharacterString	R	Indoor_SetTemp_XX_XX_XX
Object_Type	BACnetObjectType	R	ANALOG_VALUE
Present_Value	REAL	W	
Description	CharacterString	O	Indoor Temperature Of Set
Device_Type	CharacterString	O	
Status_Flags	BACnetStatusFlags	R	
Event_State	BACnetEventState	R	
Reliability	BACnetReliability	O	
Out_Of_Service	BOOLEAN	R	ALWAYS FALSE
Update_Interval	Unsigned	O	
Units	BACnetEngineeringUnits	R	
Min_Pres_Value	REAL	O	
Max_Pres_Value	REAL	O	
Resolution	REAL	O	
COV_Increment	REAL	O	
Time_Delay	Unsigned	O	1.0 Fixed
Notification_Class	Unsigned	O	
High_Limit	REAL	O	
Low_Limit	REAL	O	
Deadband	REAL	O	
Limit_Enable	BACnetLimitEnable	O	
Event_Enable	BACnetEventTransitionBits	O	
Acked_Transitions	BACnetEventTransitionBits	O	
Notify_Type	BACnetNotifyType	O	
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp		
Profile_Name	CharacterString	O	



## 12. Indoor Temperature (AI)

Property Identifier	Property Datatype	RW	Description
Object_Identifier	BACnetObjectIdentifier	R	
Object_Name	CharacterString	R	Indoor_Temp_XX_XX_XX
Object_Type	BACnetObjectType	R	ANALOG_VALUE
Present_Value	REAL	R	
Description	CharacterString	O	Indoor Temperature Of Set
Device_Type	CharacterString	O	
Status_Flags	BACnetStatusFlags	R	
Event_State	BACnetEventState	R	
Reliability	BACnetReliability	O	
Out_Of_Service	BOOLEAN	R	ALWAYS FALSE
Update_Interval	Unsigned	O	
Units	BACnetEngineeringUnits	R	
Min_Pres_Value	REAL	O	
Max_Pres_Value	REAL	O	
Resolution	REAL	O	
COV_Increment	REAL	O	
Time_Delay	Unsigned	O	1.0 Fixed
Notification_Class	Unsigned	O	
High_Limit	REAL	O	
Low_Limit	REAL	O	
Deadband	REAL	O	
Limit_Enable	BACnetLimitEnable	O	
Event_Enable	BACnetEventTransitionBits	O	
Acked_Transitions	BACnetEventTransitionBits	O	
Notify_Type	BACnetNotifyType	O	
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O	
Profile_Name	CharacterString	O	

### 13. Indoor Error Code (AV)

Property Identifier	Property Datatype	RW	Description
Object_Identifier	BACnetObjectIdentifier	R	
Object_Name	CharacterString	R	Indoor_ErrorCode_XX_XX_XX
Object_Type	BACnetObjectType	R	ANALOG_VALUE
Present_Value	REAL	R	
Description	CharacterString	O	Indoor Error Code
Device_Type	CharacterString	O	
Status_Flags	BACnetStatusFlags	R	
Event_State	BACnetEventState	R	
Reliability	BACnetReliability	O	
Out_Of_Service	BOOLEAN	R	ALWAYS FALSE
Update_Interval	Unsigned	O	
Units	BACnetEngineeringUnits	R	
Min_Pres_Value	REAL	O	
Max_Pres_Value	REAL	O	
Resolution	REAL	O	
COV_Increment	REAL	O	
Time_Delay	Unsigned	O	
Notification_Class	Unsigned	O	
High_Limit	REAL	O	
Low_Limit	REAL	O	
Deadband	REAL	O	
Limit_Enable	BACnetLimitEnable	O	
Event_Enable	BACnetEventTransitionBits	O	
Acked_Transitions	BACnetEventTransitionBits	O	
Notify_Type	BACnetNotifyType	O	
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O	
Profile_Name	CharacterString	O	

## 14. Indoor Control Mode (MSI)

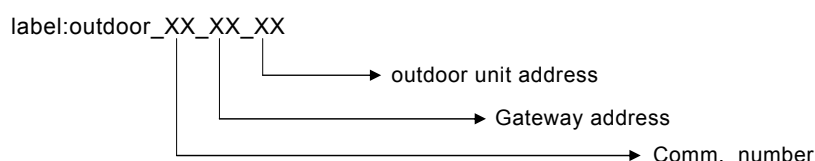
Property Identifier	Property Datatype	RW	Description
Object_Identifier	BACneObjectIdentifier	R	
Object_Name	CharacterString	R	Indoor_Control Mode_XX_XX_XX
Object_Type	BACnetObjectType	R	MULTI-STATE_OUTPUT
Present_Value	Unsigned	R	
Description	CharacterString	O	Indoor Control Mode
Device_Type	CharacterString	O	
Status_Flags	BACnetStatusFlags	R	
Event_State	BACnetEventState	R	
Reliability	BACnetReliability	O	
Out_Of_Service	BOOLEAN	R	Always FALSE
Number_Of_States	Unsigned	R	4
State_Text	BACnetARRAY[N] of CharacterString	O	0:None 1:High priority of last input 2: Central Control 3: Compulsive Control 4:Other
Priority_Array	BACnetPriorityArray	R	
Relinquish_Default	Unsigned	R	
Time_Delay	Unsigned	O	
Notification_Class	Unsigned	O	
Feedback_Value	Unsigned	O	
Event_Enable	BACnetEventTransitionBits	O	
Acked_Transitions	BACnetEventTransitionBits	O	
Notify_Type	BACnetNotifyType	O	
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O	
Profile_Name	CharacterString	O	

## 15. Indoor Control Mode (MSO)

Property Identifier	Property Datatype	RW	Description
Object_Identifier	BACnetObjectIdentifier	R	
Object_Name	CharacterString	R	Indoor_Control Mode_XX_XX_XX
Object_Type	BACnetObjectType	R	MULTI-STATE_OUTPUT
Present_Value	Unsigned	W	
Description	CharacterString	O	Indoor Control Mode
Device_Type	CharacterString	O	
Status_Flags	BACnetStatusFlags	R	
Event_State	BACnetEventState	R	
Reliability	BACnetReliability	O	
Out_Of_Service	BOOLEAN	R	Always FALSE
Number_Of_States	Unsigned	R	4
State_Text	BACnetARRAY[N] of CharacterString	O	0:None 1:High priority of last input 2: Central Control 3: Compulsive Control 4:Other
Priority_Array	BACnetPriorityArray	R	
Relinquish_Default	Unsigned	R	
Time_Delay	Unsigned	O	
Notification_Class	Unsigned	O	
Feedback_Value	Unsigned	O	
Event_Enable	BACnetEventTransitionBits	O	
Acked_Transitions	BACnetEventTransitionBits	O	
Notify_Type	BACnetNotifyType	O	
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O	
Profile_Name	CharacterString	O	

## 16. Outdoor Information (Outdoor Unit)

Property Identifier	Property Datatype	RW	Description
Object_Identifier	BACnetObjectIdentifier	R	
Object_Name	CharacterString	R	OutdoorUnit_XX_XX_XX
Object_Type	BACnetObjectType	R	GROUP
Description	CharacterString	O	
List_Of_Group_Members	List of ReadAccessSpecification	R	
Present_Value	List of ReadAccessResult	R	
Profile_Name	CharacterString	O	



## 17. Outdoor On/OFF (BI)

Property Identifier	Property Datatype	RW	Description
Object_Identifier	BACnetObjectIdentifier	R	
Object_Name	CharacterString	R	Outdoor_ErrorCode_XX_XX
Object_Type	BACnetObjectType	R	BINARY_INPUT
Present_Value	BACnetBinaryPV	W	
Description	CharacterString	O	Outdoor On OFF
Device_Type	CharacterString	O	
Status_Flags	BACnetStatusFlags	R	
Event_State	BACnetEventState	R	
Reliability	BACnetReliability	O	
Out_Of_Service	BOOLEAN	R	Always FALSE
Polarity	BACnetPolarity	R	NORMAL FXIED
Inactive_Text	CharacterString	O	OFF
Active_Text	CharacterString	O	ON
Change_Of_State_Time	BACnetDateTime	O	
Change_Of_State_Count	Unsigned	O	
Time_Of_State_Count_Reset	BACnetDateTime	O	
Elapsed_Active_Time	Unsigned32	O	
Time_Of_Active_Time_Reset	BACnetDateTime	O	
Time_Delay	Unsigned	O	
Notification_Class	Unsigned	O	
Alarm_Value	BACnetBinaryPV	O	
Event_Enable	BACnetEventTransitionBits	O	
Acked_Transitions	BACnetEventTransitionBits	O	
Notify_Type	BACnetNotifyType	O	
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O	
Profile_Name	CharacterString	O	

## 18. Outdoor Temperature (AI)

Property Identifier	Property Datatype	RW	Description
Object_Identifier	BACnetObjectIdentifier	R	
Object_Name	CharacterString	R	Outdoor_ErrorCode_XX_XX
Object_Type	BACnetObjectType	R	ANALOG_VALUE
Present_Value	REAL	R	
Description	CharacterString	O	Outdoor Temperature
Device_Type	CharacterString	O	
Status_Flags	BACnetStatusFlags	R	
Event_State	BACnetEventState	R	
Reliability	BACnetReliability	O	
Out_Of_Service	BOOLEAN	R	Always FALSE
Update_Interval	Unsigned	O	
Units	BACnetEngineeringUnits	R	
Min_Pres_Value	REAL	O	
Max_Pres_Value	REAL	O	
Resolution	REAL	O	
COV_Increment	REAL	O	1.0 fixed
Time_Delay	Unsigned	O	
Notification_Class	Unsigned	O	
High_Limit	REAL	O	
Low_Limit	REAL	O	
Deadband	REAL	O	
Limit_Enable	BACnetLimitEnable	O	
Event_Enable	BACnetEventTransitionBits	O	
Acked_Transitions	BACnetEventTransitionBits	O	
Notify_Type	BACnetNotifyType	O	
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O	
Profile_Name	CharacterString	O	

## 19. Outdoor failure code (AV)

Property Identifier	Property Datatype	RW	Description
Object_Identifier	BACnetObjectIdentifier	R	
Object_Name	CharacterString	R	Outdoor_ErrorCode_XX_XX
Object_Type	BACnetObjectType	R	ANALOG_VALUE
Present_Value	REAL	R	
Description	CharacterString	O	Outdoor Error Code
Device_Type	CharacterString	O	
Status_Flags	BACnetStatusFlags	R	
Event_State	BACnetEventState	R	
Reliability	BACnetReliability	O	
Out_Of_Service	BOOLEAN	R	Always FALSE
Update_Interval	Unsigned	O	
Units	BACnetEngineeringUnits	R	
Min_Pres_Value	REAL	O	
Max_Pres_Value	REAL	O	
Resolution	REAL	O	
COV_Increment	REAL	O	
Time_Delay	Unsigned	O	
Notification_Class	Unsigned	O	
High_Limit	REAL	O	
Low_Limit	REAL	O	
Deadband	REAL	O	
Limit_Enable	BACnetLimitEnable	O	
Event_Enable	BACnetEventTransitionBits	O	
Acked_Transitions	BACnetEventTransitionBits	O	
Notify_Type	BACnetNotifyType	O	
Event_Time_Stamps	BACnetARRAY[3] of BACnetTimeStamp	O	
Profile_Name	CharacterString	O	

## 6. Gateway

### 6.1 HA-MA164AD

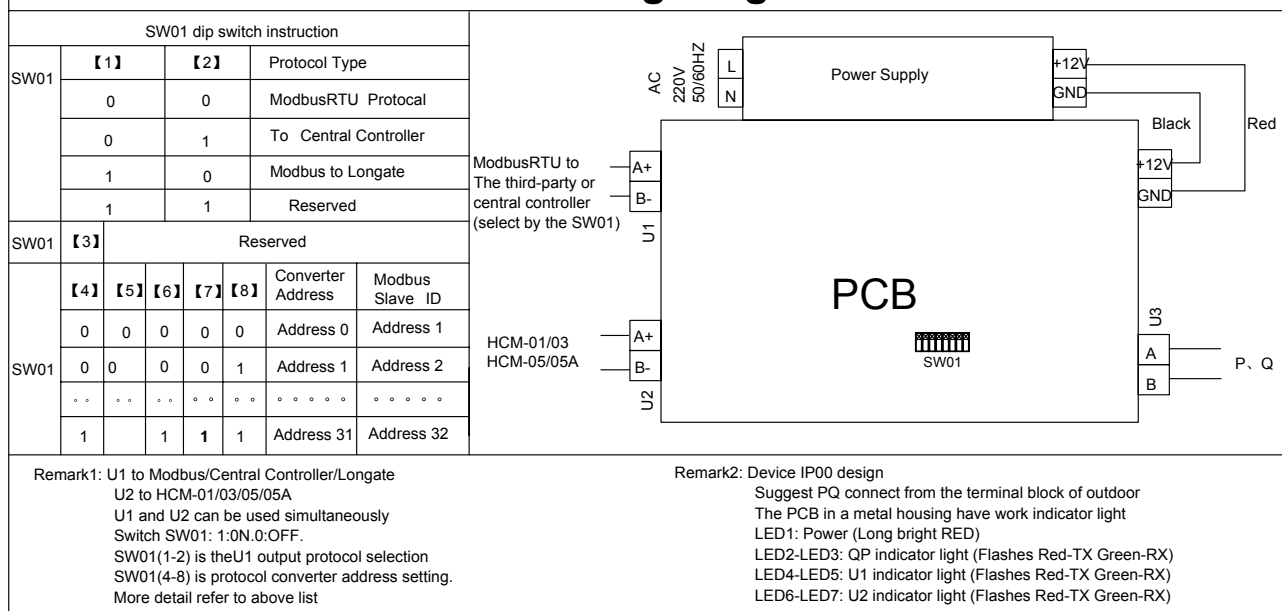


MRV	LCAC			
	Smart Power	Super Match	R410A ON/OFF	R22 ON/OFF
√				

Model No.		HA-MA164AD	
No. of IU Controllable	For Centralized controller	64	
	For BMS system	40	
	For third party devices	64	
	For Lonworks (IGU07)	64	
Protocol	Central control protocol	√	
	MRV protocol	√	
	Modbus rtu	√	
	For Lonworks (IGU07)	√	
Compatible Control devices	Centralized controller	YCZ-G001,A004	√
	Haier BMS system	HCM-01A,03,05,05A	√
	Third party devices	IGU07,HA-AC-KNX	√
Power Consumption			
Installation Method		Outside the OU	
Compatible OU Type		Side and Top discharge OU; MRV W	



## Wiring Diagram



### Modbus point list

#### Default properties:

Bits per second:9600

Data bits:8

Parity: None

Stop bits:1

#### 1.Discrete Inputs--0x02

REGISTER ADDRESS	POINT NAME	EXPLANATION
0000	INDOOR1 EXIST OR NOT	READ ONLY 1-EXIST, 0- NOT EXIST
0001	INDOOR1 ON LINE OR NOT	READ ONLY 1-ON LINE,0-OFF LINE
0002	INDOOR2 EXIST OR NOT	READ ONLY 1-EXIST, 0- NOT EXIST
0003	INDOOR2 ON LINE OR NOT	READ ONLY 1-ON LINE,0-OFF LINE
.....		
00126	INDOOR64 EXIST OR NOT	READ ONLY 1-EXIST, 0- NOT EXIST
00127	INDOOR64 ON LINE OR NOT	READ ONLY 1-ON LINE,0-OFF LINE

## 2.Coil-Ox01

REGISTER ADDRESS	POINT NAME	EXPLANATION
0000	INDOOR1 ON/OFF	READ/WRITE 1-ON,0-OFF
0001	INDOOR2 ON/OFF	READ/WRITE 1-ON,0-OFF
0002	INDOOR3 ON/OFF	READ/WRITE 1-ON,0-OFF
0003	INDOOR4 ON/OFF	READ/WRITE 1-ON,0-OFF
.....		
00062	INDOOR62 ON/OFF	READ/WRITE 1-ON,0-OFF
00063	INDOOR64 ON/OFF	READ/WRITE 1-ON,0-OFF

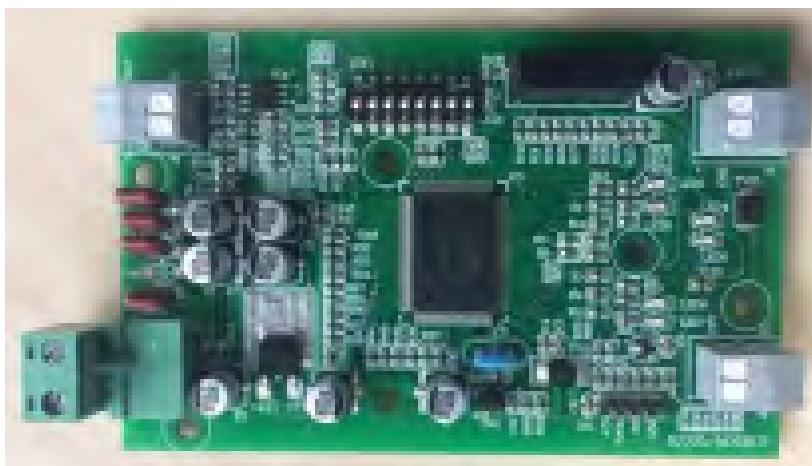
## Input Register--0x04(READ ONLY)

REGISTER ADDRESS	POINT NAME	RANGE	UNIT
0	INDOOR1 AMBIENT TEMP	-30 --60	1°C
1	INDOOR1 ERROR CODE	0-256	0-NORMAL
2	INDOOR1 HP	0-150	0.1HP
3	INDOOR2 AMBIENT TEMP	-30 --60	1°C
4	INDOOR2 ERROR CODE	0-256	0-NORMAL
5	INDOOR2 HP	0-150	0.1HP
.....			
189	INDOOR64 AMBIENT TEMP	-30 --60	
190	INDOOR64 ERROR CODE	0-256	0-NORMAL
191	INDOOR64 HP	0-150	0.1HP

### 3.Holding Register-0x03

REGISTER ADDRESS	POINT NAME	UNIT	RANGE	REMARK
0	INDOOR1 SET TEMP	°C	16-30	READ/WRITE
1	INDOOR1 RUNNING MODE		1-5	READ/WRITE 1-COOL 2-HEAT 3-DRY 4-FAN 5-AUTO
2	INDOOR1 FAN SPEED		1-4	READ/WRITE 1-LOW, 2-MID, 3-HIG 4-AUTO
3	INDOOR1 CONTROL MODE		1-4	READ/WRITE 1 -NORMAL,2-LAST IN FIRST OUT, 3-CENTRAL CONTROL, 4-LOCK
.....				
252	INDOOR64 SET TEMP	°C	16-30	READ/WRITE
253	INDOOR64 RUNNING MODE		1-5	READ/WRITE 1-COOL 2-HEAT 3-DRY 4-FAN 5-AUTO
254	INDOOR64 FAN SPEED		1-4	READ/WRITE 1-LOW, 2-MID, 3-HIG 4-AUTO
255	INDOOR64 CONTROL MODE		1-4	READ/WRITE 1 -NORMAL,2-LAST IN FIRST OUT, 3-CENTRAL CONTROL, 4-LOCK
256	OUTDOOR STATUS			1-MALFUNCTION, 0-NORMAL

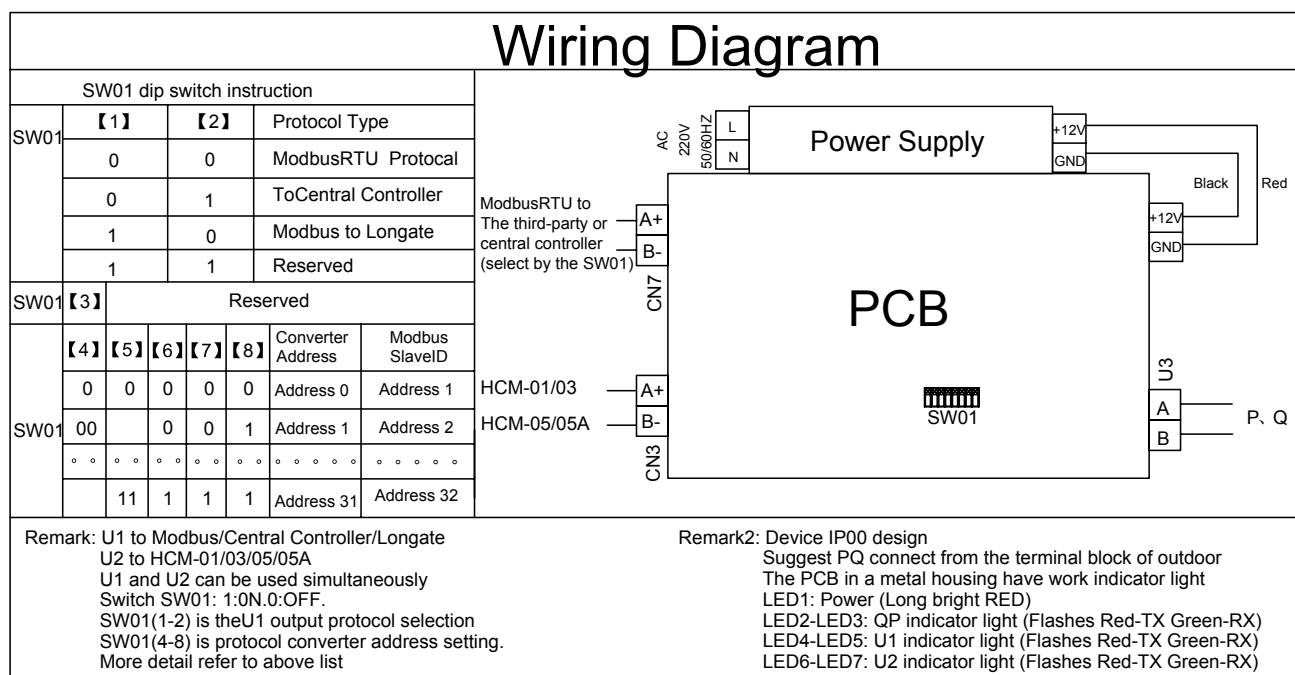
## 6.2 HA-MB164AD



MRV	LCAC			
	Smart Power	Super Match	R410A ON/OFF	R22 ON/OFF
√				

Model No.		HA-MB164AD	
No. of IU Controllable	For Centralized controller	64	
	For BMS system	40	
	For third party devices	64	
	For Lonworks (IGU07)	64	
Protocol	Central control protocol	√	
	MRV protocol	√	
	Modbus rtu	√	
	For Lonworks (IGU07)	√	
Compatible Control devices	Centralized controller	Y CZ-G001,A004	√
	Haier BMS system	HCM-01A,03,05,05A	√
	Third party devices	IGU07,HA-AC-KNX	√
Power Consumption			
Installation Method		Inside the OU	
Compatible OU Type		Top discharge OU; MRV W	

## Wiring Diagram



### Modbus point list

#### Default properties:

Bits per second:9600

Data bits:8

Parity: None

Stop bits:1

#### 1.Discrete Inputs--0x02

REGISTER ADDRESS	POINT NAME	EXPLANATION
0000	INDOOR1 EXIST OR NOT	READ ONLY 1-EXIST, 0- NOT EXIST
0001	INDOOR1 ON LINE OR NOT	READ ONLY 1-ON LINE,0-OFF LINE
0002	INDOOR2 EXIST OR NOT	READ ONLY 1-EXIST, 0- NOT EXIST
0003	INDOOR2 ON LINE OR NOT	READ ONLY 1-ON LINE,0-OFF LINE
•••••		
00126	INDOOR64 EXIST OR NOT	READ ONLY 1-EXIST, 0- NOT EXIST
00127	INDOOR64 ON LINE OR NOT	READ ONLY 1-ON LINE,0-OFF LINE

## 2.Coil-Ox01

REGISTER ADDRESS	POINT NAME	EXPLANATION
0000	INDOOR1 ON/OFF	READ/WRITE 1-ON,0-OFF
0001	INDOOR2 ON/OFF	READ/WRITE 1-ON,0-OFF
0002	INDOOR3 ON/OFF	READ/WRITE 1-ON,0-OFF
0003	INDOOR4 ON/OFF	READ/WRITE 1-ON,0-OFF
.....		
00062	INDOOR62 ON/OFF	READ/WRITE 1-ON,0-OFF
00063	INDOOR64 ON/OFF	READ/WRITE 1-ON,0-OFF

## Input Register--0x04(READ ONLY)

REGISTER ADDRESS	POINT NAME	RANGE	UNIT
0	INDOOR1 AMBIENT TEMP	-30 --60	1°C
1	INDOOR1 ERROR CODE	0-256	0-NORMAL
2	INDOOR1 HP	0-150	0.1HP
3	INDOOR2 AMBIENT TEMP	-30 --60	1°C
4	INDOOR2 ERROR CODE	0-256	0-NORMAL
5	INDOOR2 HP	0-150	0.1HP
.....			
189	INDOOR64 AMBIENT TEMP	-30 --60	
190	INDOOR64 ERROR CODE	0-256	0-NORMAL
191	INDOOR64 HP	0-150	0.1HP

### 3.Holding Register-0x03

REGISTER ADDRESS	POINT NAME	UNIT	RANGE	REMARK
0	INDOOR1 SET TEMP	°C	16-30	READ/WRITE
1	INDOOR1 RUNNING MODE		1-5	READ/WRITE 1-COOL 2-HEAT 3-DRY 4-FAN 5-AUTO
2	INDOOR1 FAN SPEED		1-4	READ/WRITE 1-LOW, 2-MID, 3-HIG 4-AUTO
3	INDOOR1 CONTROL MODE		1-4	READ/WRITE 1 -NORMAL,2-LAST IN FIRST OUT, 3-CENTRAL CONTROL, 4-LOCK
.....				
252	INDOOR64 SET TEMP	°C	16-30	READ/WRITE
253	INDOOR64 RUNNING MODE		1-5	READ/WRITE 1-COOL 2-HEAT 3-DRY 4-FAN 5-AUTO
254	INDOOR64 FAN SPEED		1-4	READ/WRITE 1-LOW, 2-MID, 3-HIG 4-AUTO
255	INDOOR64 CONTROL MODE		1-4	READ/WRITE 1 -NORMAL,2-LAST IN FIRST OUT, 3-CENTRAL CONTROL, 4-LOCK
256	OUTDOOR STATUS			1-MALFUNCTION, 0-NORMAL

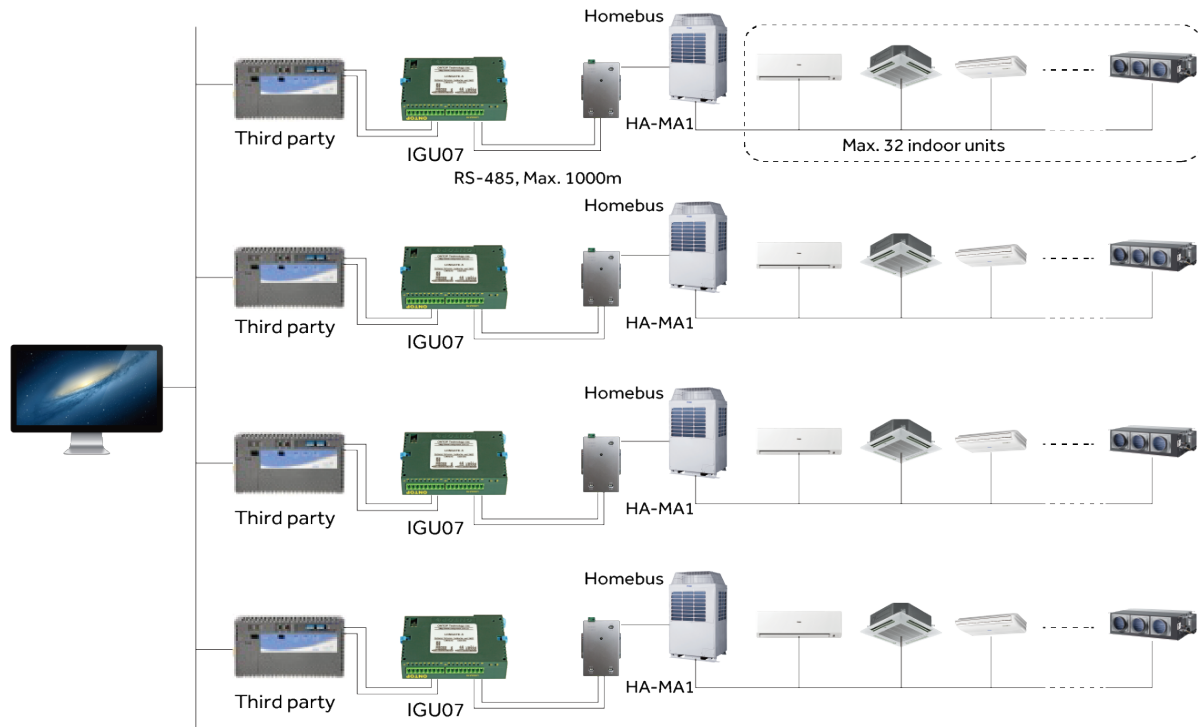
## 6.3 IGU07



MRV	LCAC			
	Smart Power	Super Match	R410A ON/OFF	R22 ON/OFF
√				



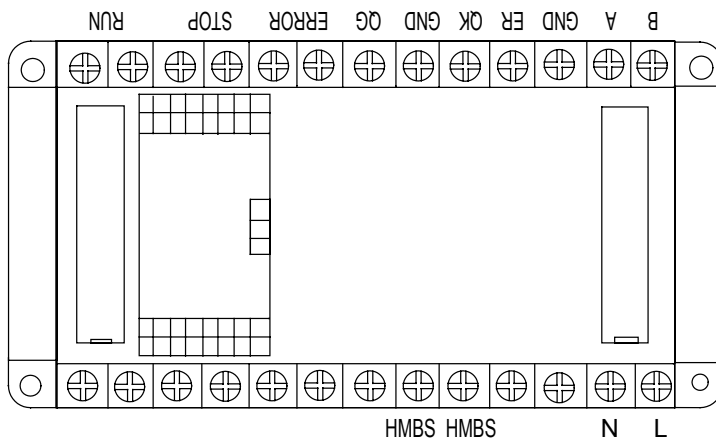
## LonWorks System



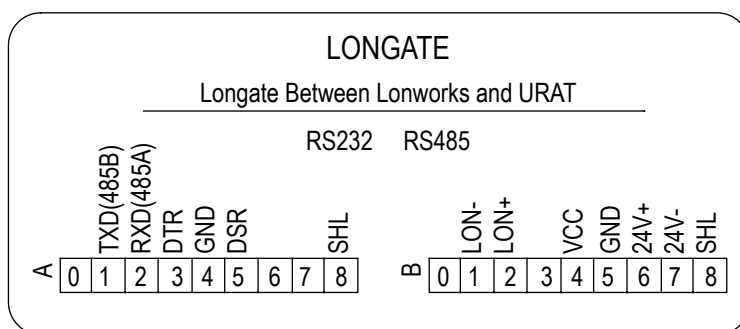
- Protocol adapter, convert Modbus rtu to LonWorks
- Each system requires one IGU07+ HA-M\*1
- Max. 32 indoor units can be connected in one system
- External 24V DC power supply is needed by IGU07.
- RS-485: Max. 1000m

## Connection Illustration

### Plug Identify



L, N: Power supply 220V AC 50hz  
 A: To IGU07 RXD(485A)  
 B: To IGU07 TXD(485B)  
 HBMS: To AC system P/Q



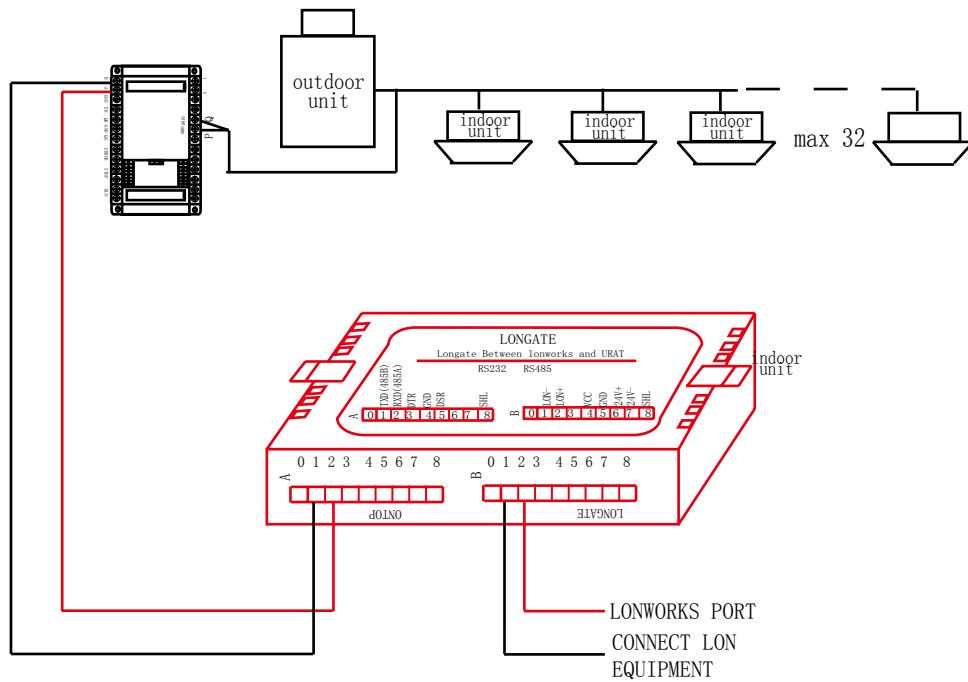
24V+ : To positive terminal of 24 VDC  
 24V-: To negative terminal of 24 VDC  
 TXD(485B): To IGU06 B terminal  
 RXD(485A): To IGU06 A terminal  
 LON+, LON-: To host of Lon

**Function**

IGU06 works together with IGU07 to convert AC protocol to Lonworks protocol.  
 Connect IGU06 with AC system to convert AC Homebus protocol to Modbus RTU protocol.  
 IGU07 convert Modbus RTU protocol to Lonworks protocol.

Power supply:  
 IGU06: 220V AC 50 Hz  
 IGU07: 24V DC  
 XIF document is supplied separately.

**Constructed program**



One VRF system must be equipped with 1 set of IGU06+IGU07. Max. 32 ps indoor units are in one VRF system.

**Protocol Verify Table**

No.	Point description	Property Data type	Name: Read	Name: Write	State
1	Indoor 1 WorkMode	SNVT_hvac_mode	nvoMode 0	nviMode 0	0: AUTO 1: Fan 2: Cool 3: Dry 4: Heat
2	Indoor 2 WorkMode		nvoMode 1	nviMode 1	
3	Indoor 3 WorkMode		nvoMode 2	nviMode 2	
4	Indoor 4 WorkMode		nvoMode 3	nviMode 3	
5	Indoor 5 WorkMode		nvoMode 4	nviMode 4	
6	Indoor 6 WorkMode		nvoMode 5	nviMode 5	
7	Indoor 7 WorkMode		nvoMode 6	nviMode 6	
8	Indoor 8 WorkMode		nvoMode 7	nviMode 7	
9	Indoor 9 WorkMode		nvoMode 8	nviMode 8	
10	Indoor 10 WorkMode		nvoMode 9	nviMode 9	
11	Indoor 11 WorkMode		nvoMode 10	nviMode 10	
12	Indoor 12 WorkMode		nvoMode 11	nviMode 11	
13	Indoor 13 WorkMode		nvoMode 12	nviMode 12	
14	Indoor 14 WorkMode		nvoMode 13	nviMode 13	
15	Indoor 15 WorkMode		nvoMode 14	nviMode 14	
16	Indoor 16 WorkMode		nvoMode 15	nviMode 15	
17	Indoor 17 WorkMode		nvoMode 16	nviMode 16	
18	Indoor 18 WorkMode		nvoMode 17	nviMode 17	
19	Indoor 19 WorkMode		nvoMode 18	nviMode 18	
20	Indoor 20 WorkMode		nvoMode 19	nviMode 19	
21	Indoor 21 WorkMode		nvoMode 20	nviMode 20	
22	Indoor 22 WorkMode		nvoMode 21	nviMode 21	
23	Indoor 23 WorkMode		nvoMode 22	nviMode 22	
24	Indoor 24 WorkMode		nvoMode 23	nviMode 23	
25	Indoor 25 WorkMode		nvoMode 24	nviMode 24	
26	Indoor 26 WorkMode		nvoMode 25	nviMode 25	
27	Indoor 27 WorkMode		nvoMode 26	nviMode 26	
28	Indoor 28 WorkMode		nvoMode 27	nviMode 27	
29	Indoor 29 WorkMode		nvoMode 28	nviMode 28	
30	Indoor 30 WorkMode		nvoMode 29	nviMode 29	
31	Indoor 31 WorkMode		nvoMode 30	nviMode 30	
32	Indoor 32 WorkMode		nvoMode 31	nviMode 31	
33	Indoor 1 SetTemperature	SNVT_temp_p	nvoTempSet 0	nviTempSet 0	Integer from 16 to 30
34	Indoor 2 SetTemperature		nvoTempSet 1	nviTempSet 1	
35	Indoor 3 SetTemperature		nvoTempSet 2	nviTempSet 2	
36	Indoor 4 SetTemperature		nvoTempSet 3	nviTempSet 3	
37	Indoor 5 SetTemperature		nvoTempSet 4	nviTempSet 4	
38	Indoor 6 SetTemperature		nvoTempSet 5	nviTempSet 5	
39	Indoor 7 SetTemperature		nvoTempSet 6	nviTempSet 6	
40	Indoor 8 SetTemperature		nvoTempSet 7	nviTempSet 7	
41	Indoor 9 SetTemperature		nvoTempSet 8	nviTempSet 8	
42	Indoor 10 SetTemperature		nvoTempSet 9	nviTempSet 9	

### Protocol Verify Table

No.	Point description	Property Data type	Name : Read	Name: Write	State		
42	Indoor 10 SetTemperature		nvoTempSet 9	nviTempSet 9			
43	Indoor 11 SetTemperature		nvoTempSet 10	nviTempSet 10			
44	Indoor 12 SetTemperature		nvoTempSet 11	nviTempSet 11			
45	Indoor 13 SetTemperature		nvoTempSet 12	nviTempSet 12			
46	Indoor 14 SetTemperature		nvoTempSet 13	nviTempSet 13			
47	Indoor 15 SetTemperature		nvoTempSet 14	nviTempSet 14			
48	Indoor 16 SetTemperature		nvoTempSet 15	nviTempSet 15			
49	Indoor 17 SetTemperature		nvoTempSet 16	nviTempSet 16			
50	Indoor 18 SetTemperature		nvoTempSet 17	nviTempSet 17			
51	Indoor 19 SetTemperature		nvoTempSet 18	nviTempSet 18			
52	Indoor 20 SetTemperature		nvoTempSet 19	nviTempSet 19			
53	Indoor 21 SetTemperature		nvoTempSet 20	nviTempSet 20			
54	Indoor 22 SetTemperature		nvoTempSet 21	nviTempSet 21			
55	Indoor 23 SetTemperature		nvoTempSet 22	nviTempSet 22		0: Auto 1: Low 2: Normal 3: High	
56	Indoor 24 SetTemperature		nvoTempSet 23	nviTempSet 23			
57	Indoor 25 SetTemperature		nvoTempSet 24	nviTempSet 24			
58	Indoor 26 SetTemperature		nvoTempSet 25	nviTempSet 25			
59	Indoor 27 SetTemperature		nvoTempSet 26	nviTempSet 26			
60	Indoor 28 SetTemperature		nvoTempSet 27	nviTempSet 27			
61	Indoor 29 SetTemperature		nvoTempSet 28	nviTempSet 28			
62	Indoor 30 SetTemperature		nvoTempSet 29	nviTempSet 29			
63	Indoor 31 SetTemperature		nvoTempSet 30	nviTempSet 30			
64	Indoor 32 SetTemperature		nvoTempSet 31	nviTempSet 31			
65	Indoor 1 Fan Speed		SNVT_lev_disc	nvoFan 0			nviFan 0
66	Indoor 2 Fan Speed			nvoFan 1			nviFan 1
67	Indoor 3 Fan Speed			nvoFan 2			nviFan 2
68	Indoor 4 Fan Speed			nvoFan 3			nviFan 3
69	Indoor 5 Fan Speed			nvoFan 4			nviFan 4
70	Indoor 6 Fan Speed			nvoFan 5			nviFan 5
71	Indoor 7 Fan Speed			nvoFan 6			nviFan 6
72	Indoor 8 Fan Speed			nvoFan 7			nviFan 7
73	Indoor 9 Fan Speed			nvoFan 8		nviFan 8	
74	Indoor 10 Fan Speed	nvoFan 9		nviFan 9			
75	Indoor 11 Fan Speed	nvoFan 10		nviFan 10			
76	Indoor 12 Fan Speed	nvoFan 11		nviFan 11			
77	Indoor 13 Fan Speed	nvoFan 12		nviFan 12			
78	Indoor 14 Fan Speed	nvoFan 13		nviFan 13			
79	Indoor 15 Fan Speed	nvoFan 14		nviFan 14			
80	Indoor 16 Fan Speed	nvoFan 15		nviFan 15			
81	Indoor 17 Fan Speed	nvoFan 16		nviFan 16			
82	Indoor 18 Fan Speed	nvoFan 17		nviFan 17			
83	Indoor 19 Fan Speed	nvoFan 18	nviFan 18				

## Protocol Verify Table

No.	Point description	Property Data type	Name : Read	Name: Write	State				
84	Indoor 20 Fan Speed		nvoFan 19	nviFan 19					
85	Indoor 21 Fan Speed		nvoFan 20	nviFan 20					
86	Indoor 22 Fan Speed		nvoFan 21	nviFan 21					
87	Indoor 23 Fan Speed		nvoFan 22	nviFan 22					
88	Indoor 24 Fan Speed		nvoFan 23	nviFan 23					
89	Indoor 25 Fan Speed		nvoFan 24	nviFan 24					
90	Indoor 26 Fan Speed		nvoFan 25	nviFan 25					
91	Indoor 27 Fan Speed		nvoFan 26	nviFan 26					
92	Indoor 28 Fan Speed		nvoFan 27	nviFan 27					
93	Indoor 29 Fan Speed		nvoFan 28	nviFan 28					
94	Indoor 30 Fan Speed		nvoFan 29	nviFan 29					
95	Indoor 31 Fan Speed		nvoFan 30	nviFan 30					
96	Indoor 32 Fan Speed		nvoFan 31	nviFan 31					
97	Indoor 1 OnOFF		SNVT_state	nvoSwitchState 0		bit0	nviSwitchState 0	bit0	0: Off 1: On
	Indoor 2 OnOFF					bit1		bit1	
	Indoor 3 OnOFF					bit2		bit2	
	Indoor 4 OnOFF					bit3		bit3	
	Indoor 5 OnOFF	bit4			bit4				
	Indoor 6 OnOFF	bit5			bit5				
	Indoor 7 OnOFF	bit6			bit6				
	Indoor 8 OnOFF	bit7			bit7				
	Indoor 9 OnOFF	bit8			bit8				
	Indoor 10 OnOFF	bit9			bit9				
	Indoor 11 OnOFF	bit10			bit10				
	Indoor 12 OnOFF	bit11			bit11				
	Indoor 13 OnOFF	bit12			bit12				
	Indoor 14 OnOFF	bit13			bit13				
	Indoor 15 OnOFF	bit14			bit14				
	Indoor 16 OnOFF	bit15			bit15				
98	Indoor 17 OnOFF	nvoSwitchState 1		nviSwitchState 1	bit0	bit0			
	Indoor 18 OnOFF				bit1	bit1			
	Indoor 19 OnOFF				bit2	bit2			
	Indoor 20 OnOFF				bit3	bit3			
	Indoor 21 OnOFF				bit4	bit4			
	Indoor 22 OnOFF				bit5	bit5			
	Indoor 23 OnOFF				bit6	bit6			
	Indoor 24 OnOFF				bit7	bit7			
	Indoor 25 OnOFF				bit8	bit8			
	Indoor 26 OnOFF				bit9	bit9			
	Indoor 27 OnOFF				bit10	bit10			
	Indoor 28 OnOFF				bit11	bit11			
	Indoor 29 OnOFF				bit12	bit12			
	Indoor 30 OnOFF				bit13	bit13			
	Indoor 31 OnOFF				bit14	bit14			
	Indoor 32 OnOFF				bit15	bit15			

### Protocol Verify Table

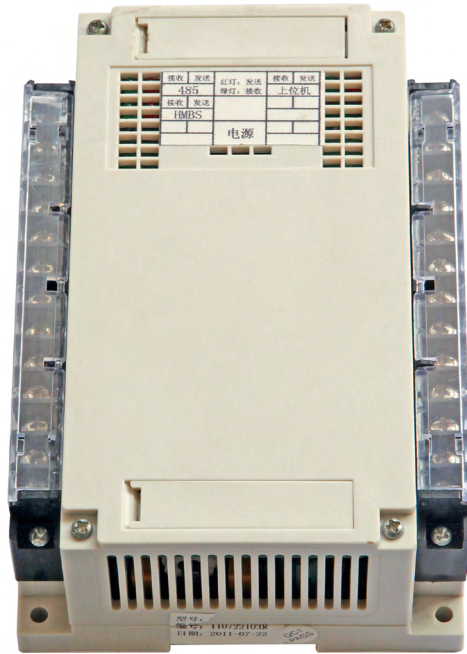
No.	Point description	Property Data type	Name : Read	Name: Write	State
99	Indoor 1 Temperature	SNVT_temp_p	nvoWorkTemp 0		Integer
100	Indoor 2 Temperature		nvoWorkTemp 1		
101	Indoor 3 Temperature		nvoWorkTemp 2		
102	Indoor 4 Temperature		nvoWorkTemp 3		
103	Indoor 5 Temperature		nvoWorkTemp 4		
104	Indoor 6 Temperature		nvoWorkTemp 5		
105	Indoor 7 Temperature		nvoWorkTemp 6		
106	Indoor 8 Temperature		nvoWorkTemp 7		
107	Indoor 9 Temperature		nvoWorkTemp 8		
108	Indoor 10 Temperature		nvoWorkTemp 9		
109	Indoor 11 Temperature		nvoWorkTemp 10		
110	Indoor 12 Temperature		nvoWorkTemp 11		
111	Indoor 13 Temperature		nvoWorkTemp 12		
112	Indoor 14 Temperature		nvoWorkTemp 13		
113	Indoor 15 Temperature		nvoWorkTemp 14		
114	Indoor 16 Temperature		nvoWorkTemp 15		
115	Indoor 17 Temperature		nvoWorkTemp 16		
116	Indoor 18 Temperature		nvoWorkTemp 17		
117	Indoor 19 Temperature		nvoWorkTemp 18		
118	Indoor 20 Temperature		nvoWorkTemp 19		
119	Indoor 21 Temperature		nvoWorkTemp 20		
120	Indoor 22 Temperature		nvoWorkTemp 21		
121	Indoor 23 Temperature		nvoWorkTemp 22		
122	Indoor 24 Temperature		nvoWorkTemp 23		
123	Indoor 25 Temperature		nvoWorkTemp 24		
124	Indoor 26 Temperature		nvoWorkTemp 25		
125	Indoor 27 Temperature		nvoWorkTemp 26		
126	Indoor 28 Temperature		nvoWorkTemp 27		
127	Indoor 29 Temperature		nvoWorkTemp 28		
128	Indoor 30 Temperature		nvoWorkTemp 29		
129	Indoor 31 Temperature		nvoWorkTemp 30		
130	Indoor 32 Temperature		nvoWorkTemp 31		

## Protocol Verify Table

No.	Point description	Property Data type	Name : Read	Name: Write	State	
131	Indoor 1 Error Code	SNVT_state	nvoErrorstate 0	bit0		0: Normal 1: Error
	Indoor 2 Error Code			bit1		
	Indoor 3 Error Code			bit2		
	Indoor 4 Error Code			bit3		
	Indoor 5 Error Code			bit4		
	Indoor 6 Error Code			bit5		
	Indoor 7 Error Code			bit6		
	Indoor 8 Error Code			bit7		
	Indoor 9 Error Code			bit8		
	Indoor 10 Error Code			bit9		
	Indoor 11 Error Code			bit10		
	Indoor 12 Error Code			bit11		
	Indoor 13 Error Code			bit12		
	Indoor 14 Error Code			bit13		
	Indoor 15 Error Code			bit14		
	Indoor 16 Error Code			bit15		
132	Indoor 17 Error Code	SNVT_state	nvoErrorstate 1	bit0		
	Indoor 18 Error Code			bit1		
	Indoor 19 Error Code			bit2		
	Indoor 20 Error Code			bit3		
	Indoor 21 Error Code			bit4		
	Indoor 22 Error Code			bit5		
	Indoor 23 Error Code			bit6		
	Indoor 24 Error Code			bit7		
	Indoor 25 Error Code			bit8		
	Indoor 26 Error Code			bit9		
	Indoor 27 Error Code			bit10		
	Indoor 28 Error Code			bit11		
	Indoor 29 Error Code			bit12		
	Indoor 30 Error Code			bit13		
	Indoor 31 Error Code			bit14		
	Indoor 32 Error Code			bit15		



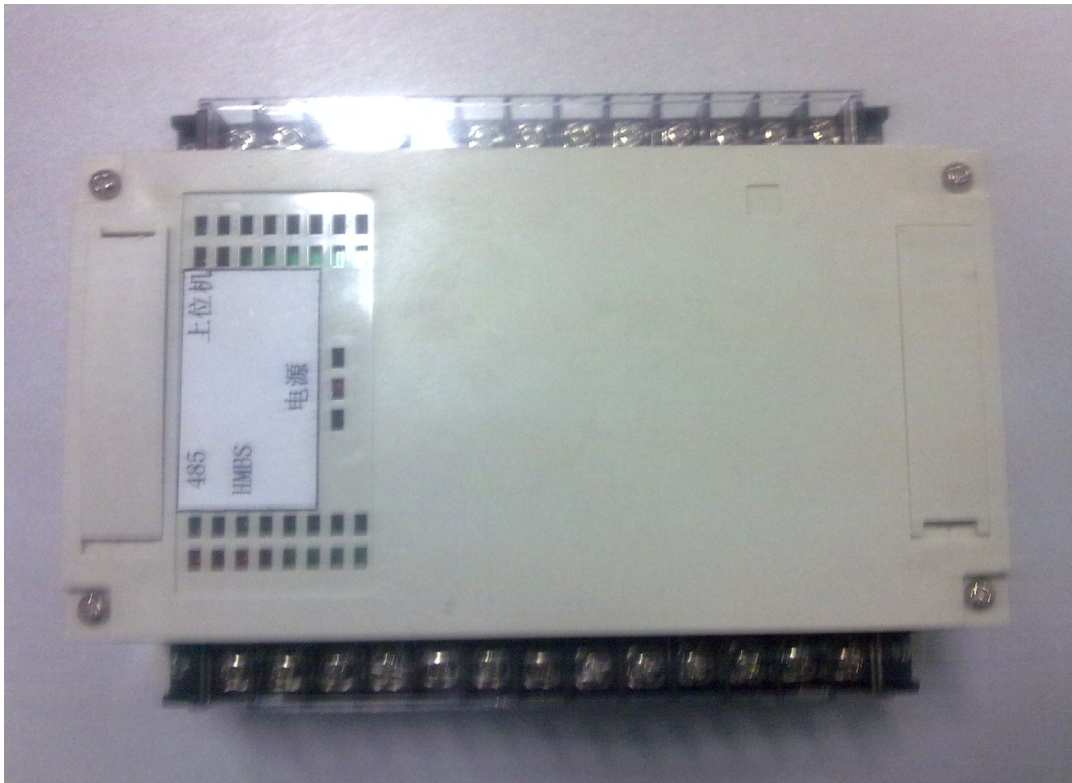
6.4 IGU06



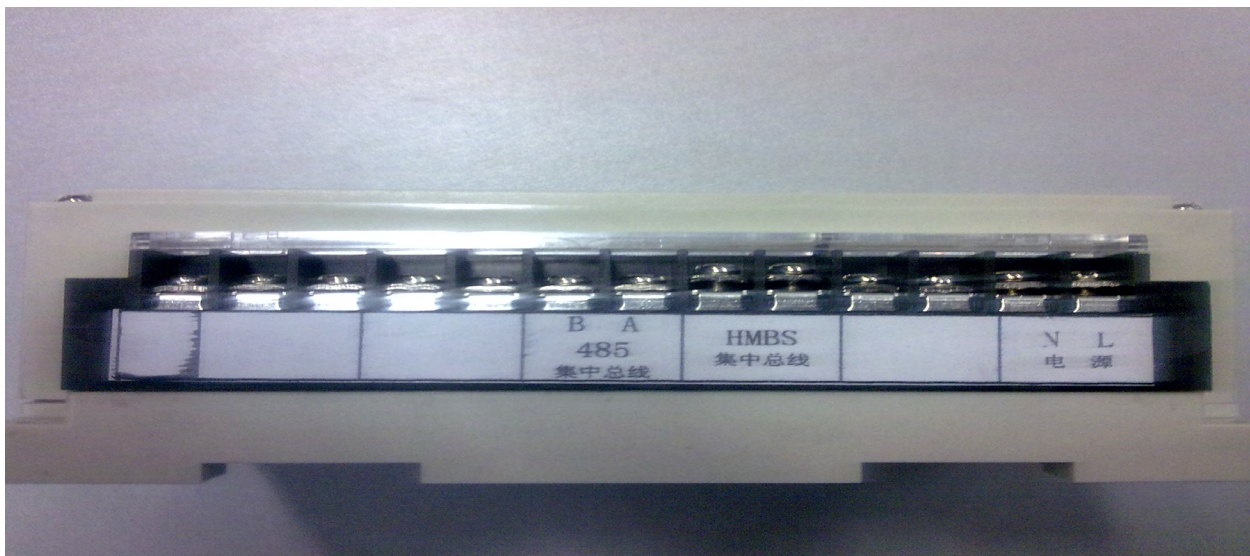
MRV	LCAC			
	Smart Power	Super Match	R410A ON/OFF	R22 ON/OFF
√				

## I. Terminal instruction

### 1. Appearance

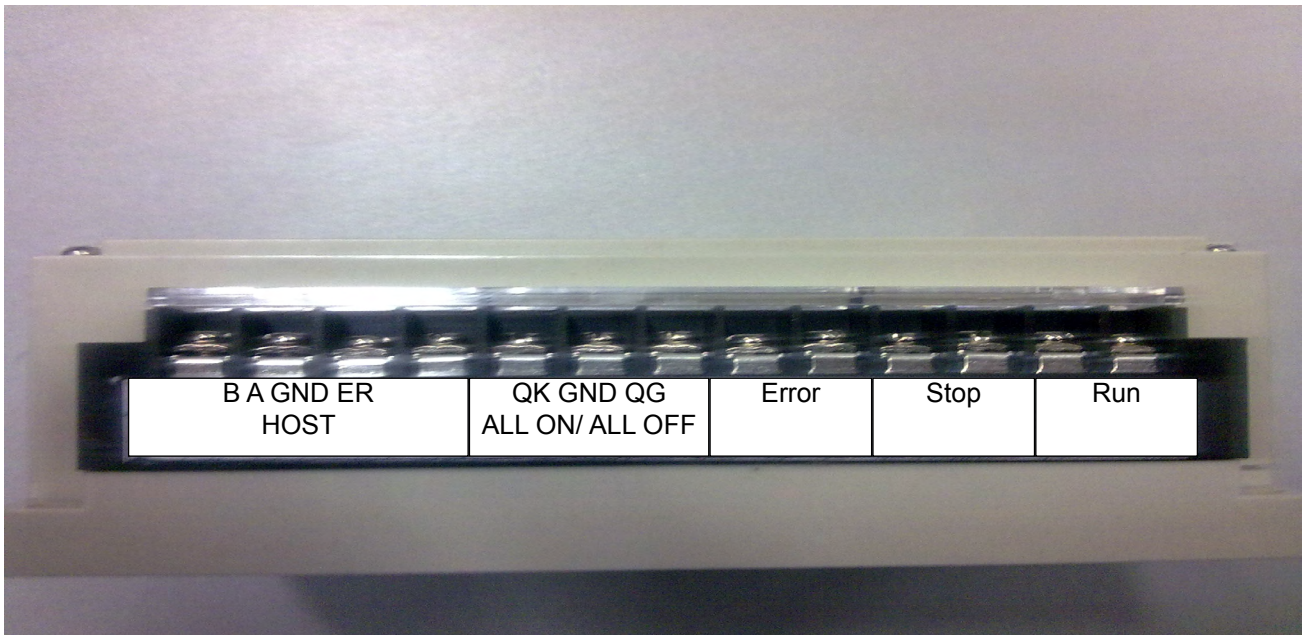


### 2. Terminal 1



L、N: 220VAC power supply  
HMBS: Connect with P/Q from MRV

## Terminal 2



B A : 485 communication port with host, A :485+,B :485—

GND :Earthing

ER :Ground

Note: Both GND and ER connect wire depend on the host requirement.

QK GND QG :All ON & OFF

Modbus send “ALL ON” to indoor unit after QK and GND is in short circuit. Modbus send “ALL OFF “to indoor unit after QG and GND is in short circuit.

Note: Between QK and GND, between QG and GND is dry contact. High voltage cannot be input.

Error : Error indication port

This port is in open circuit if no error with indoor unit. It convert to short circuit even if one indoor unit has problem.

Note : This port can be input 220 VAC voltage & 5 A current.

Stop : Stop indication port

This port is in short circuit after all indoor units are OFF. It is in open circuit even if only one indoor unit is ON.

Note : This port can be input 220 VAC voltage & 5 A current.

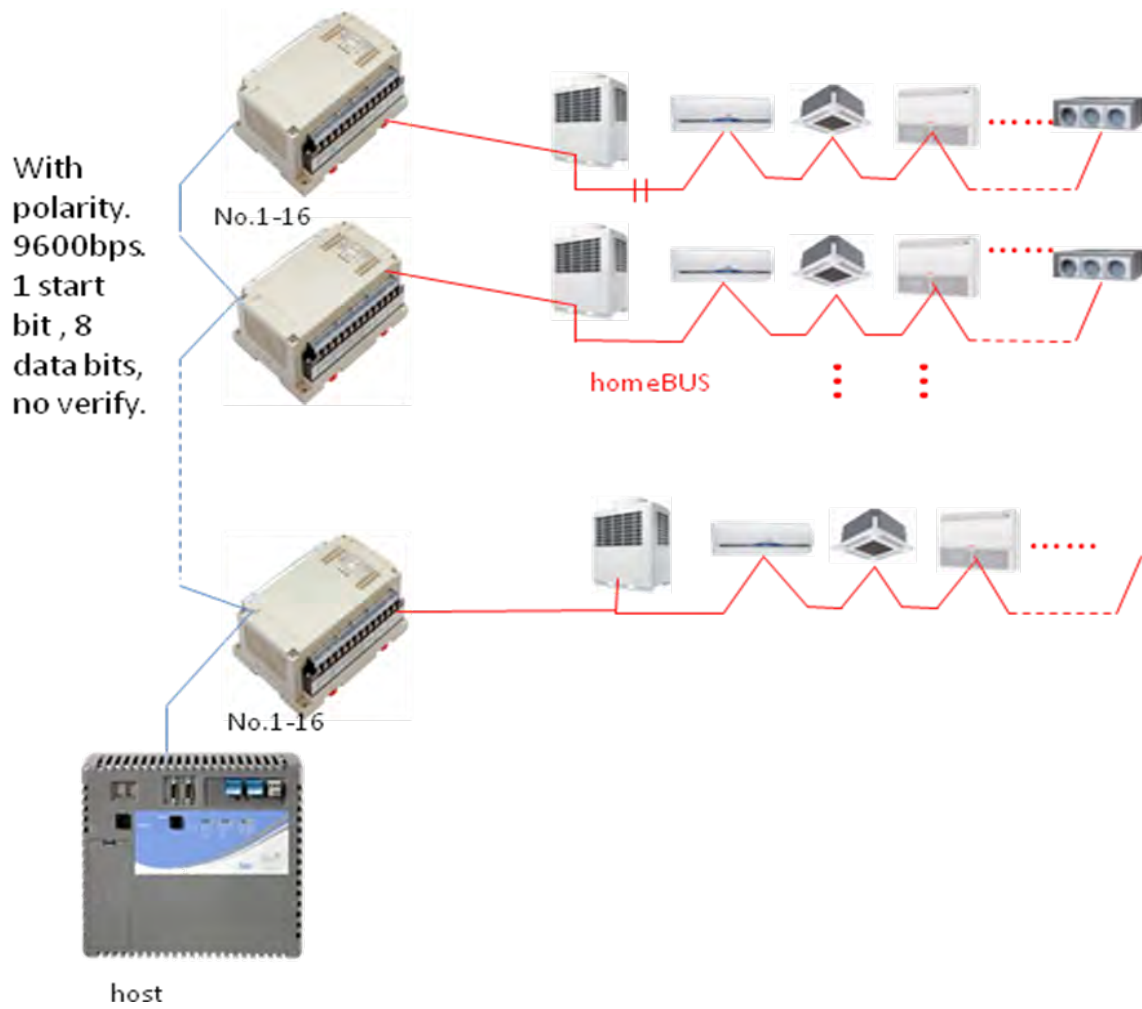
Run : Run indication port

This port is in short circuit even if only one indoor unit is ON. It is in open circuit after all indoor unit OFF.

Note: This port can be input 220 VAC voltage & 5 A current.

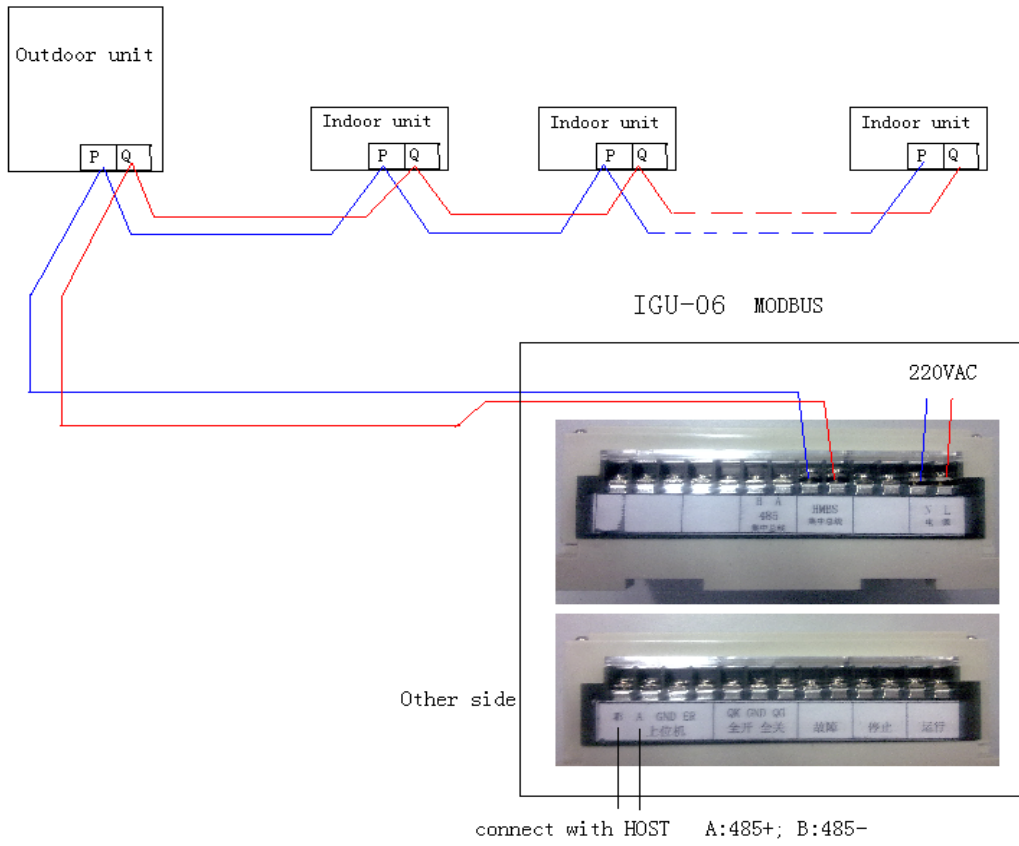
## II. Wiring

### 1. Sketch map





## 2.Wiring diagram



Note :This MODBUS module receives the data from A/C system. It sends command to indoor units after receiving the command from HOST.

## 3.Fixing

There are screw holes at 4 corners of base. Fix it with screw.

## III. Dipswitch setting



Function dipswitch: OFF, ON, OFF, ON (1, 2, 3, 4)

	1	2	3	4
OFF	Error code display	work with ICR01 and IGU04	No check out	one double byte is one ON/OFF condition
ON	Error code not display	work without ICR01 and IGU04	even checkout	one double byte is 16 ON/OFF conditions

Address dipswitch on the right: It is No.2 in picture.

ON:1;OFF:0

Dipswitch	1	2	3	4	Modbus address
	0	0	0	0	1
	0	0	0	1	2
	0	0	1	0	3
	0	0	1	1	4
	0	1	0	0	5
	0	1	0	1	6
	0	1	1	0	7
	0	1	1	1	8
	1	0	0	0	9
	1	0	0	1	10
	1	0	1	0	11
	1	0	1	1	12
	1	1	0	0	13
	1	1	0	1	14
	1	1	1	0	15
	1	1	1	1	16

#### IV. Verify table

1.Connection point table (soft mode)

DI is on/off input signal

DO is on/off output signal

AI is simulation input signal

AO is simulation output signal

COM is communication port

The signal type is depending on measurement from BAS. Eg: DO means on/off output signal from BAS. It should be connecting with DI from MRV

Bit rate 9600

Data digit 8

Verify digit Null

Stop digit 1

Standard Modbus (RTU) protocol

Read and write data cannot cross data block, only to read and write data of the same data block.

Control command is pulse signal, keep signal cannot be used.

Startup digit is one digit. It is verified with CRC after one frame command finish.

03 code is used for query. 10 code is used for control. The conditions of 16ps indoor unit are put into one address.

Eg : Indoor unit ON/OFF condition is 40198. Both ON/OFF set and ON/OFF condition of No1-16 indoor units are read from this address. The "0" digit stand for No1 indoor unit. The "1" digit stands for No2 indoor unit. The"15" digit stands for No16 indoor unit.

Where is marked with "Read/write", it is operated with this address to send command and read data.

This verify table is general one.

When the function code 4 of the dip switch is on, the point table as follows:

No.	Point description	Protocol address	Protocol additional address	Point type	Condition 1	Condition 2	Condition 3	Condition 4		Note
1	Reserve	40005								
2	Reserve	40005								
3	Reserve	40005								
4	Reserve	40005								
5	Reserve	40005	4							
6	Reserve	40005	5							
7	Reserve	40005	6							
8	Reserve	40005	7							
9	Reserve	40005	8							
10	Reserve	40005	9							
11	Reserve	40005	10							
12	Reserve	40005	11							
13	Reserve	40005	12							
14	Reserve	40005	13							
15	Reserve	40005	14							
16	Reserve	40005	15							
	run mode set for No.1	40006		AO	0:auto	1:fan	2:cooling	3:dry	4:heating	Read/write
	run mode set for No.2	40007		AO	0:auto	1:fan	2:cooling	3:dry	4:heating	Read/write
	run mode set for No.3	40008		AO	0:auto	1:fan	2:cooling	3:dry	4:heating	Read/write
	.....									
	run mode set for No.62	40067		AO	0:auto	1:fan	2:cooling	3:dry	4:heating	Read/write
	run mode set for No.63	40068		AO	0:auto	1:fan	2:cooling	3:dry	4:heating	Read/write
	run mode set for No.64	40069		AO	0:auto	1:fan	2:cooling	3:dry	4:heating	Read/write
	Temp set for No1	40070		AO						Between 16-30; write
	Temp set for No2	40071		AO						Between 16-30; write
	Temp set for No3	40072		AO						Between 16-30; write



No.	Point description	Protocol address	Protocol additional address	Point type	Condition 1	Condition 2	Condition 3	Condition 4		Note
	...			AO						
	Temp set for No64	40133		AO						Between 16-30; write
	Fan speed set for No1	40134		AO	0:auto	1:low	2:med	3:high		Read/write
	Fan speed set for No2	40135		AO	0:auto	1:low	2:med	3:high		Read/write
	Fan speed set for No3	40136		AO	0:auto	1:low	2:med	3:high		Read/write
	Fan speed set for No64	40197		AO	0:auto	1:low	2:middle	3:high		Read/write
	No1 indoor unit ON/OFF condition	40198	0	DI	0:off	1:on				Read/write
	No2 indoor unit ON/OFF condition	40198	1	DI	0:off	1:on				Read/write
	No3 indoor unit ON/OFF condition	40198	2	DI	0:off	1:on				Read/write
	No4 indoor unit ON/OFF condition	40198	3	DI						Read/write
	No5 indoor unit ON/OFF condition	40198	4	DI						Read/write
	No6 indoor unit ON/OFF condition	40198	5	DI						Read/write
	No7 indoor unit ON/OFF condition	40198	6	DI						Read/write
	No8 indoor unit ON/OFF condition	40198	7	DI						Read/write
	No9 indoor unit ON/OFF condition	40198	8	DI						Read/write

No.	Point description	Protocol address	Protocol additional address	Point type	Condition 1	Condition 2	Condition 3	Condition 4	Note
	No10 indoor unit ON/OFF condition	40198	9	DI					Read/write
	ON/OFF condition								
	No11 indoor unit ON/OFF condition	40198	10	DI					Read/write
	No12 indoor unit ON/OFF condition	40198	11	DI					Read/write
	No13 indoor unit ON/OFF condition	40198	12	DI					Read/write
	No14 indoor unit ON/OFF condition	40198	13	DI					Read/write
	No15 indoor unit ON/OFF condition	40198	14	DI					Read/write
	No16 indoor unit ON/OFF condition	40198	15	DI					Read/write
	No17 indoor unit ON/OFF condition	40199	0	DI					Read/write
	No18 indoor unit ON/OFF condition	40199	1	DI					Read/write
	No19 indoor unit ON/OFF condition	40199	2	DI					Read/write
	No20 indoor unit ON/OFF condition	40199	3	DI					Read/write
	No21 indoor unit ON/OFF condition	40199	4	DI					Read/write
	No22 indoor unit ON/OFF condition	40199	5	DI					Read/write
	No23 indoor unit ON/OFF condition	40199	6	DI					Read/write
	No24 indoor unit ON/OFF condition	40199	7	DI					Read/write

No.	Point description	Protocol address	Protocol additional address	Point type	Condition 1	Condition 2	Condition 3	Condition 4	Note
	No25indoor unit ON/OFF condition	40199	8	DI					Read/write
	No26indoor unit ON/OFF condition	40199	9	DI					Read/write
	No27indoor unit ON/OFF condition	40199	10	DI					Read/write
	No28indoor unit ON/OFF condition	40199	11	DI					Read/write
	No29indoor unit ON/OFF condition	40199	12	DI					Read/write
	No30indoor unit ON/OFF condition	40199	13	DI					Read/write
	No31indoor unit ON/OFF condition	40199	14	DI					Read/write
	No32indoor unit ON/OFF condition	40199	15	DI					Read/write
	No33indoor unit ON/OFF condition	40200	0	DI					Read/write
	No34indoor unit ON/OFF condition	40200	1	DI					Read/write
	No35indoor unit ON/OFF condition	40200	2	DI					Read/write
	No36indoor unit ON/OFF condition	40200	3	DI					Read/write
	No37indoor unit ON/OFF condition	40200	4	DI					Read/write
	No38indoor unit ON/OFF condition	40200	5	DI					Read/write
	No39indoor unit ON/OFF condition	40200	6	DI					Read/write
	No40indoor unit ON/OFF condition	40200	7	DI					Read/write

No.	Point description	Protocol address	Protocol additional address	Point type	Condition 1	Condition 2	Condition 3	Condition 4	Note
	No41indoor unit ON/ OFF condition	40200	8	DI					Read/ write
	ON/OFF condition								
	No42indoor unit ON/ OFF condition	40200	9	DI					Read/ write
	No43indoor unit ON/ OFF condition	40200	10	DI					Read/ write
	No44indoor unit ON/ OFF condition	40200	11	DI					Read/ write
	No45indoor unit ON/ OFF condition	40200	12	DI					Read/ write
	No46indoor unit ON/ OFF condition	40200	13	DI					Read/ write
	No47indoor unit ON/ OFF condition	40200	14	DI					Read/ write
	No48indoor unit ON/ OFF condition	40200	15	DI					Read/ write
	No49indoor unit ON/ OFF condition	40201	0	DI					Read/ write
	No50indoor unit ON/ OFF condition	40201	1	DI					Read/ write
	No51indoor unit ON/ OFF condition	40201	2	DI					Read/ write
	No52indoor unit ON/ OFF condition	40201	3	DI					Read/ write

No.	Point description	Protocol address	Protocol additional address	Point type	Condition 1	Condition 2	Condition 3	Condition 4	Note
	No53indoor unit ON/ OFF condition	40201	4	DI					Read/ write
	No54indoor unit ON/ OFF condition	40201	5	DI					Read/ write
	No55indoor unit ON/ OFF condition	40201	6	DI					Read/ write
	No56indoor unit ON/ OFF condition	40201	7	DI					Read/ write
	No57indoor unit ON/ OFF condition	40201	8	DI					Read/ write
	No58indoor unit ON/ OFF condition	40201	9	DI					Read/ write
	No59indoor unit ON/ OFF condition	40201	10	DI					Read/ write
	No60indoor unit ON/ OFF condition	40201	11	DI					Read/ write
	No61indoor unit ON/ OFF condition	40201	12	DI					Read/ write
	No62indoor unit ON/ OFF condition	40201	13	DI					Read/ write
	No63indoor unit ON/ OFF condition	40201	14	DI					Read/ write
	No64indoor unit ON/ OFF condition	40201	15	DI					Read/ write
	No1 indoor unit current temp.	40202		AI					Read only

No.	Point description	Protocol address	Protocol additional address	Point type	Condition 1	Condition 2	Condition 3	Condition 4	Note
	No2 indoor unit current temp.	40203		AI					Read only
	No3 indoor unit current temp.	40204		AI					Read only
	...			AI					
	No64 indoor unit current temp.	40265		AI					Read only
	No1 indoor unit error condition	40266	0	DI	0:normal	1:error			Read only
	No2 indoor unit error condition	40266	1	DI	0:normal	1:error			Read only
	No3 indoor unit error condition	40266	2	DI	0:normal	1:error			Read only
	No4 indoor unit error condition	40266	3	DI					Read only
	No5 indoor unit error condition	40266	4	DI					Read only
	No6 indoor unit error condition	40266	5	DI					Read only
	No7 indoor unit error condition	40266	6	DI					Read only
	No8 indoor unit error condition	40266	7	DI					Read only
	No9 indoor unit error condition	40266	8	DI					Read only
	No10 indoor unit error condition	40266	9	DI					Read only
	No11 indoor unit error condition	40266	10	DI					Read only
	No12 indoor unit error condition	40266	11	DI					Read only

No.	Point description	Protocol address	Protocol additional address	Point type	Condition 1	Condition 2	Condition 3	Condition 4	Note
	No13indoor unit error condition	40266	12	DI					Read only
	No14indoor unit error condition	40266	13	DI					Read only
	No15indoor unit error condition	40266	14	DI					Read only
	No16indoor unit error condition	40266	15	DI					Read only
	No17indoor unit error condition	40267	0	DI					Read only
	No18indoor unit error condition	40267	1	DI					Read only
	No19indoor unit error condition	40267	2	DI					Read only
	error condition								
	No20indoor unit error condition	40267	3	DI					Read only
	No21indoor unit error condition	40267	4	DI					Read only
	No22indoor unit error condition	40267	5	DI					Read only
	No23indoor unit error condition	40267	6	DI					Read only
	No24indoor unit error condition	40267	7	DI					Read only
	No25indoor unit error condition	40267	8	DI					Read only
	No26indoor unit error condition	40267	9	DI					Read only
	No27indoor unit error condition	40267	10	DI					Read only

No.	Point description	Protocol address	Protocol additional address	Point type	Condition 1	Condition 2	Condition 3	Condition 4	Note
	No28indoor unit error condition	40267	11	DI					Read only
	No29indoor unit error condition	40267	12	DI					Read only
	No30indoor unit error condition	40267	13	DI					Read only
	No31indoor unit error condition	40267	14	DI					Read only
	No32indoor unit error condition	40267	15	DI					Read only
	No33indoor unit error condition	40268	0	DI					Read only
	No34indoor unit error condition	40268	1	DI					Read only
	No35indoor unit error condition	40268	2	DI					Read only
	No36indoor unit error condition	40268	3	DI					Read only
	No37indoor unit error condition	40268	4	DI					Read only
	No38indoor unit error condition	40268	5	DI					Read only
	No39indoor unit error condition	40268	6	DI					Read only
	No40indoor unit error condition	40268	7	DI					Read only
	No41indoor unit error condition	40268	8	DI					Read only
	No42indoor unit error condition	40268	9	DI					Read only
	No43indoor unit error condition	40268	10	DI					Read only



No.	Point description	Protocol address	Protocol additional address	Point type	Condition 1	Condition 2	Condition 3	Condition 4	Note
	No44indoor unit error condition	40268	11	DI					Read only
	No45indoor unit error condition	40268	12	DI					Read only
	No46indoor unit error condition	40268	13	DI					Read only
	No47indoor unit error condition	40268	14	DI					Read only
	No48indoor unit error condition	40268	15	DI					Read only
	No49indoor unit error condition	40269	0	DI					Read only
	No50indoor unit error condition	40269	1	DI					Read only
	error condition								
	No51indoor unit error condition	40269	2	DI					Read only
	No52indoor unit error condition	40269	3	DI					Read only
	No53indoor unit error condition	40269	4	DI					Read only
	No54indoor unit error condition	40269	5	DI					Read only
	No55indoor unit error condition	40269	6	DI					Read only
	No56indoor unit error condition	40269	7	DI					Read only
	No57indoor unit error condition	40269	8	DI					Read only
	No58indoor unit error condition	40269	9	DI					Read only

No.	Point description	Protocol address	Protocol additional address	Point type	Condition 1	Condition 2	Condition 3	Condition 4	Note
	No59indoor unit error condition	40269	10	DI					Read only
	No60indoor unit error condition	40269	11	DI					Read only
	No61indoor unit error condition	40269	12	DI					Read only
	No62indoor unit error condition	40269	13	DI					Read only
	No63indoor unit error condition	40269	14	DI					Read only
	No64indoor unit error condition	40269	15	DI					Read only
	No1 indoor unit TC1	40271							Read only
	No2 indoor unit TC1	40272							Read only
	No3 indoor unit TC1	40272							Read only
	...								
	No64 indoor unit TC1	40333							Read only
	No1 indoor unit TC2	40334							Read only
	No2 indoor unit TC2	40335							Read only
	No3 indoor unit TC2	40336							Read only
	...								
	No64 indoor unit TC2	40397							Read only

## 2.Dry contact (hard mode)

Signal types depend on BAS system interface. Such as: in physical interface table, DO is on/off output signal for BAS system, should be connected to the DI of MRV equipment. So on.

No	Port and usage	DI	DO	AI	AO	Short circuit	Open circuit	Note
1	MRV							
	Running condition	1				Running	Null	Keep signal
	Stop condition	1				Stop	Null	Keep signal
	Integrated on/ off	1				Integrated on/ off	Null	Keep signal
	Control all on		1			Indoor all on		Keep signal
	Control all off		1			Indoor all off		Keep signal

- (1) All the indoor unit off display of f, any one indoor unit on will display on.
- (2) Whether outdoor unit or indoor unit, if one unit on /off display on /off, the on /off and the on can exist at the same time.
- (3) The QK, QG & GND are passive contact, cannot access strong current; on /off , run, stop this three sets of terminals can be connected to 220 VAC power, but the current should not be greater than 5A.

When the function code 4 of the dip switch is off, the point table as follows:

For this point table whether AI, AO or DI, DO, 03 code is used for read. 10 code is used for write command

No.	Point description	Protocol address	Point type	Condition 1	Condition 2	Condition 3	Condition 4		Note
1	Reserve								
2	Overall on/off setting	40002	DO	0:off	1:on				
3	On /off condition	40011		0:off	1:on	All the indoor unit off display off, any one indoor unit on will display on.			
4	On /off condition	40012		0:normal	1:on/off	Any one unit on /off display on /off			
5	Reserve								
6	Reserve								
7	Reserve								
8	Reserve								
9	Reserve								
10	Reserve								
11	No. 1 indoor unit ON/OFF setting	40101	DO	0:off	1:on				
12	No.2 indoor unit ON/OFF setting	40102	DO	0:off	1:on				
13	No. 3 indoor unit ON/OFF setting	40103	DO	0:off	1:on				
14	No. 4 indoor unit ON/OFF setting	40104	DO	0:off	1:on				
15	No. 5 indoor unit ON/OFF setting	40105	DO	0:off	1:on				
16	No. 6 indoor unit ON/OFF setting	40106	DO	0:off	1:on				

No.	Point description	Protocol address	Point type	Condition 1	Condition 2	Condition 3	Condition 4		Note
17	No. 7 indoor unit ON/OFF setting	40107	DO	0:off	1:on				
18	No. 8 indoor unit ON/OFF setting	40108	DO	0:off	1:on				
19	No. 9 indoor unit ON/OFF setting	40109	DO	0:off	1:on				
20	No. 10 indoor unit ON/OFF setting	40110	DO	0:off	1:on				
21	No. 11 indoor unit ON/OFF setting	40111	DO	0:off	1:on				
22	No. 12 indoor unit ON/OFF setting	40112	DO	0:off	1:on				
23	No. 13 indoor unit ON/OFF setting	40113	DO	0:off	1:on				
24	No. 14 indoor unit ON/OFF setting	40114	DO	0:off	1:on				
25	No. 15 indoor unit ON/OFF setting	40115	DO	0:off	1:on				
26	No. 16 indoor unit ON/OFF setting	40116	DO	0:off	1:on				
27	No. 17 indoor unit ON/OFF setting	40117	DO	0:off	1:on				
28	No. 18 indoor unit ON/OFF setting	40118	DO	0:off	1:on				
29	No. 19 indoor unit ON/OFF setting	40119	DO	0:off	1:on				
30	No. 20 indoor unit ON/OFF setting	40120	DO	0:off	1:on				

No.	Point description	Protocol address	Point type	Condition 1	Condition 2	Condition 3	Condition 4		Note
33	No. 23 indoor unit ON/OFF setting	40123	DO	0:off	1:on				
34	No. 24 indoor unit ON/OFF setting	40124	DO	0:off	1:on				
35	No. 25 indoor unit ON/OFF setting	40125	DO	0:off	1:on				
36	No. 26 indoor unit ON/OFF setting	40126	DO	0:off	1:on				
37	No. 27 indoor unit ON/OFF setting	40127	DO	0:off	1:on				
38	No. 28 indoor unit ON/OFF setting	40128	DO	0:off	1:on				
39	No. 29 indoor unit ON/OFF setting	40129	DO	0:off	1:on				
40	No. 30 indoor unit ON/OFF setting	40130	DO	0:off	1:on				
41	No. 31 indoor unit ON/OFF setting	40131	DO	0:off	1:on				
42	No. 32 indoor unit ON/OFF setting	40132	DO	0:off	1:on				
43	No. 33 indoor unit ON/OFF setting	40133	DO	0:off	1:on				
44	No. 34 indoor unit ON/OFF setting	40134	DO	0:off	1:on				
45	No. 35 indoor unit ON/OFF setting	40135	DO	0:off	1:on				

No.	Point description	Protocol address	Point type	Condition 1	Condition 2	Condition 3	Condition 4		Note
46	No. 36 indoor unit ON/OFF setting	40136	DO	0:off	1:on				
47	No. 37 indoor unit ON/OFF setting	40137	DO	0:off	1:on				
48	No. 38 indoor unit ON/OFF setting	40138	DO	0:off	1:on				
49	No. 39 indoor unit ON/OFF setting	40139	DO	0:off	1:on				
50	No. 40 indoor unit ON/OFF setting	40140	DO	0:off	1:on				
51	No. 41 indoor unit ON/OFF setting	40141	DO	0:off	1:on				
52	No. 42 indoor unit ON/OFF setting	40142	DO	0:off	1:on				
53	No. 43 indoor unit ON/OFF setting	40143	DO	0:off	1:on				
54	No. 44 indoor unit ON/OFF setting	40144	DO	0:off	1:on				
55	No. 45 indoor unit ON/OFF setting	40145	DO	0:off	1:on				
56	No. 46 indoor unit ON/OFF setting	40146	DO	0:off	1:on				
57	No. 47 indoor unit ON/OFF setting	40147	DO	0:off	1:on				
58	No. 48 indoor unit ON/OFF setting	40148	DO	0:off	1:on				

No.	Point description	Protocol address	Point type	Condition 1	Condition 2	Condition 3	Condition 4		Note
59	No. 49 indoor unit ON/OFF setting	40149	DO	0:off	1:on				
60	No. 50 indoor unit ON/OFF setting	40150	DO	0:off	1:on				
61	No. 51 indoor unit ON/OFF setting	40151	DO	0:off	1:on				
62	No. 52 indoor unit ON/OFF setting	40152	DO	0:off	1:on				
63	No. 53 indoor unit ON/OFF setting	40153	DO	0:off	1:on				
64	No. 54 indoor unit ON/OFF setting	40154	DO	0:off	1:on				
65	No. 55 indoor unit ON/OFF setting	40155	DO	0:off	1:on				
66	No. 56 indoor unit ON/OFF setting	40156	DO	0:off	1:on				
67	No. 57 indoor unit ON/OFF setting	40157	DO	0:off	1:on				
68	No. 58 indoor unit ON/OFF setting	40158	DO	0:off	1:on				
69	No. 59 indoor unit ON/OFF setting	40159	DO	0:off	1:on				
70	No. 60 indoor unit ON/OFF setting	40160	DO	0:off	1:on				
71	No.61 indoor unit ON/OFF setting	40161	DO	0:off	1:on				

No.	Point description	Protocol address	Point type	Condition 1	Condition 2	Condition 3	Condition 4		Note
72	No. 62 indoor unit ON/OFF setting	40162	DO	0:off	1:on				
73	No. 63 indoor unit ON/OFF setting	40163	DO	0:off	1:on				
74	No.64 indoor unit ON/OFF setting	40164	DO	0:off	1:on				
75	Run mode set for No.1	40201	AO	0: AUTO	1: FAN	2:COOLING	3:DRY	4:HEATING	
76	Run mode set for No.2	40202	AO	0: AUTO	1: FAN	2:COOLING	3:DRY	4:HEATING	
77	Run mode set for No.3	40203	AO	0: AUTO	1: FAN	2:COOLING	3:DRY	4:HEATING	
78	.....	.....							
79	Run mode set for No.62	40262	AO	0: AUTO	1: FAN	2:COOLING	3:DRY	4:HEATING	
80	Run mode set for No.63	40263	AO	0: AUTO	1: FAN	2:COOLING	3:DRY	4:HEATING	
						COOLING		HEATING	
81	Run mode set for No.64	40264	AO	0: AUTO	1: FAN	2:COOLING	3:DRY	4:HEATING	
82	Temp. set for No.1 indoor unit	40301	AO						Between 16-30
83	Temp. set for No.2 indoor unit	40302	AO						Between 16-30
84	Temp. set for No.3 indoor unit	40303	AO						Between 16-30
85	...		AO						
86	Temp. set for No.64 indoor unit	40364	AO						Between 16-30
87	Fan speed set for No.1 indoor unit	40401	AO	0:AUTO	1:LOW	2:MED	3:HIGH		
88	Fan speed set for No.2 indoor unit	40402	AO	0:AUTO	1:LOW	2:MED	3:HIGH		
89	Fan speed set for No.3 indoor unit	40403	AO	0:AUTO	1:LOW	2:MED	3:HIGH		



No.	Point description	Protocol address	Point type	Condition 1	Condition 2	Condition 3	Condition 4		Note
90	...		AO						
91	Fan speed set for No.64 indoor unit	40464	AO	0:AUTO	1:LOW	2:MED	3:HIGH		
92	No.1 indoor unit ON/OFF condition	40501	DI	0:off	1:on				
93	No.2 indoor unit ON/OFF condition	40502	DI	0:off	1:on				
94	No.3 indoor unit ON/OFF condition	40503	DI	0:off	1:on				
95	No.4 indoor unit ON/OFF condition	40504	DI						
96	No.5 indoor unit ON/OFF condition	40505	DI						
97	No.6 indoor unit ON/OFF condition	40506	DI						
98	No.7 indoor unit ON/OFF condition	40507	DI						
99	No.8 indoor unit ON/OFF condition	40508	DI						
100	No.9 indoor unit ON/OFF condition	40509	DI						
101	No.10 indoor unit ON/OFF condition	40510	DI						
102	No.11 indoor unit ON/OFF condition	40511	DI						
103	No.12 indoor unit ON/OFF condition	40512	DI						

No.	Point description	Protocol address	Point type	Condition 1	Condition 2	Condition 3	Condition 4		Note
104	No.13 indoor unit ON/OFF condition	40513	DI						
105	No.14 indoor unit ON/OFF condition	40514	DI						
106	No.15 indoor unit ON/OFF condition	40515	DI						
107	No.16 indoor unit ON/OFF condition	40516	DI						
108	No.17 indoor unit ON/OFF condition	40517	DI						
109	No.18 indoor unit ON/OFF condition	40518	DI						
110	No.19 indoor unit ON/OFF condition	40519	DI						
111	No.20 indoor unit ON/OFF condition	40520	DI						
112	No.21 indoor unit ON/OFF condition	40521	DI						
113	No.22 indoor unit ON/OFF condition	40522	DI						
114	No.23 indoor unit ON/OFF condition	40523	DI						
	condition								
115	No.24 indoor unit ON/OFF condition	40524	DI						
116	No.25 indoor unit ON/OFF condition	40525	DI						

No.	Point description	Protocol address	Point type	Condition 1	Condition 2	Condition 3	Condition 4		Note
117	No.26 indoor unit ON/OFF condition	40526	DI						
118	No.27 indoor unit ON/OFF condition	40527	DI						
119	No.28 indoor unit ON/OFF condition	40528	DI						
120	No.29 indoor unit ON/OFF condition	40529	DI						
121	No.30 indoor unit ON/OFF condition	40530	DI						
122	No.31 indoor unit ON/OFF condition	40531	DI						
123	No.32 indoor unit ON/OFF condition	40532	DI						
124	No.33 indoor unit ON/OFF condition	40533	DI						
125	No.34 indoor unit ON/OFF condition	40534	DI						
126	No.35 indoor unit ON/OFF condition	40535	DI						
127	No.36 indoor unit ON/OFF condition	40536	DI						
128	No.37 indoor unit ON/OFF condition	40537	DI						
129	No.38 indoor unit ON/OFF condition	40538	DI						

No.	Point description	Protocol address	Point type	Condition 1	Condition 2	Condition 3	Condition 4		Note
130	No.39 indoor unit ON/OFF condition	40539	DI						
131	No.40 indoor unit ON/OFF condition	40540	DI						
132	No.41 indoor unit ON/OFF condition	40541	DI						
133	No.42 indoor unit ON/OFF condition	40542	DI						
134	No.43 indoor unit ON/OFF condition	40543	DI						
135	No.44 indoor unit ON/OFF condition	40544	DI						
136	No.45 indoor unit ON/OFF condition	40545	DI						
137	No.46 indoor unit ON/OFF condition	40546	DI						
138	No.47 indoor unit ON/OFF condition	40547	DI						
139	No.48 indoor unit ON/OFF condition	40548	DI						
140	No.49 indoor unit ON/OFF condition	40549	DI						
141	No.50 indoor unit ON/OFF condition	40550	DI						
142	No.51 indoor unit ON/OFF condition	40551	DI						

No.	Point description	Protocol address	Point type	Condition 1	Condition 2	Condition 3	Condition 4		Note
143	No.52 indoor unit ON/OFF condition	40552	DI						
144	No.53 indoor unit ON/OFF condition	40553	DI						
145	No.54 indoor unit ON/OFF condition	40554	DI						
	condition								
146	No.55 indoor unit ON/OFF condition	40555	DI						
147	No.56 indoor unit ON/OFF condition	40556	DI						
148	No.57 indoor unit ON/OFF condition	40557	DI						
149	No.58 indoor unit ON/OFF condition	40558	DI						
150	No.59 indoor unit ON/OFF condition	40559	DI						
151	No.60 indoor unit ON/OFF condition	40560	DI						
152	No.61 indoor unit ON/OFF condition	40561	DI						
153	No.62 indoor unit ON/OFF condition	40562	DI						
154	No.63 indoor unit ON/OFF condition	40563	DI						
155	No.64 indoor unit ON/OFF condition	40564	DI						

No.	Point description	Protocol address	Point type	Condition 1	Condition 2	Condition 3	Condition 4		Note
156	Run mode for No.1 indoor unit	40601	AI	0:AUTO	1:FAN	2:COOLING	3:DRY	4:HEATING	
157	Run mode for No.2 indoor unit	40602	AI	0:AUTO	1:FAN	2:COOLING	3:DRY	4:HEATING	
158	Run mode for No.3 indoor unit	40603	AI	0:AUTO	1:FAN	2:COOLING	3:DRY	4:HEATING	
159	...		AI						
160	Run mode for No.64 indoor unit	40664	AI	0:AUTO	1:FAN	2:COOLING	3:DRY	4:HEATING	
161	No.1 indoor unit current temp.	40701	AI						
162	No.2 indoor unit current temp.	40702	AI						
163	No.3 indoor unit current temp.	40703	AI						
164	...		AI						
165	No.64 indoor unit current temp.	40764	AI						
166	No.1 indoor unit current fan speed	40801	AI						Between 16-30
167	No.2 indoor unit current fan speed	40802	AI						Between 16-30
168	No.3 indoor unit current fan speed	40803	AI						Between 16-30
169	...		AI						
170	No.64 indoor unit current fan speed	40864	AI						Between 16-30
171	No.1 indoor unit TC1 temp.	40901	AI						
172	No.2 indoor unit TC1 temp.	40902	AI						
173	No.3 indoor unit TC1 temp.	40903	AI						

No.	Point description	Protocol address	Point type	Condition 1	Condition 2	Condition 3	Condition 4		Note
174	...		AI						
175	No.64 indoor unit TC1 temp.	40964	AI						
176	No.1 indoor unit TC2 temp.	41001	AI						
177	No.2 indoor unit TC2 temp.	41002	AI						
178	No.3 indoor unit TC2 temp.	41003	AI						
179	...		AI						
180	No.64 indoor unit TC2 temp.	41064	AI						
181	No.1 indoor unit error condition	41101	DI		0:normal	1:error			
182	No.2 indoor unit error condition	41102	DI		0:normal	1:error			
183	No.3 indoor unit error condition	41103	DI		0:normal	1:error			
184	No.4 indoor unit error condition	41104	DI		0:normal	1:error			
185	No.5 indoor unit error condition	41105	DI		0:normal	1:error			
186	No.6 indoor unit error condition	41106	DI		0:normal	1:error			
187	No.7 indoor unit error condition	41107	DI		0:normal	1:error			
188	No.8 indoor unit error condition	41108	DI		0:normal	1:error			
189	No.9 indoor unit error condition	41109	DI						
190	No.10 indoor unit error condition	41110	DI						
191	No.11 indoor unit error condition	41111	DI						

No.	Point description	Protocol address	Point type	Condition 1	Condition 2	Condition 3	Condition 4		Note
192	No.12 indoor unit error condition	41112	DI						
193	No.13 indoor unit error condition	41113	DI						
194	No.14 indoor unit error condition	41114	DI						
195	No.15 indoor unit error condition	41115	DI						
196	No.16 indoor unit error condition	41116	DI						
197	No.17 indoor unit error condition	41117	DI						
198	No.18 indoor unit error condition	41118	DI						
199	No.19 indoor unit error condition	41119	DI						
200	No.20 indoor unit error condition	41120	DI						
201	No.21 indoor unit error condition	41121	DI						
202	No.22 indoor unit error condition	41122	DI						
203	No.23 indoor unit error condition	41123	DI						
204	No.24 indoor unit error condition	41124	DI						



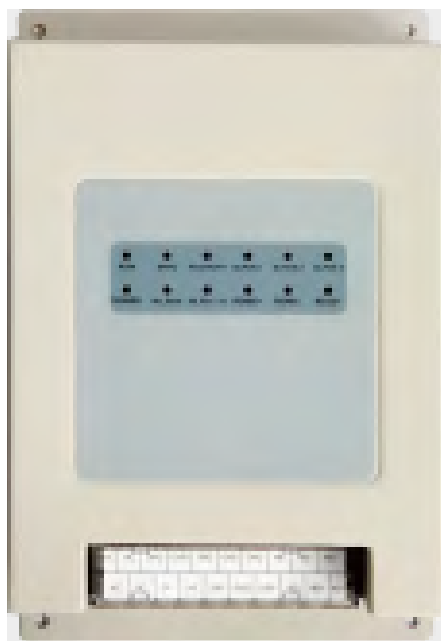
No.	Point description	Protocol address	Point type	Condition 1	Condition 2	Condition 3	Condition 4		Note
	condition								
205	No.25 indoor unit error condition	41125	DI						
206	No.26 indoor unit error condition	41126	DI						
207	No.27 indoor unit error condition	41127	DI						
208	No.28 indoor unit error condition	41128	DI						
209	No.29 indoor unit error condition	41129	DI						
210	No.30 indoor unit error condition	41130	DI						
211	No.31 indoor unit error condition	41131	DI						
212	No.32 indoor unit error condition	41132	DI						
213	No.33 indoor unit error condition	41133	DI						
214	No.34 indoor unit error condition	41134	DI						
215	No.35 indoor unit error condition	41135	DI						
216	No.36 indoor unit error condition	41136	DI						

No.	Point description	Protocol address	Point type	Condition 1	Condition 2	Condition 3	Condition 4		Note
217	No.37 indoor unit error condition	41137	DI						
218	No.38 indoor unit error condition	41138	DI						
219	No.39 indoor unit error condition	41139	DI						
220	No.40 indoor unit error condition	41140	DI						
221	No.41 indoor unit error condition	41141	DI						
222	No.42 indoor unit error condition	41142	DI						
223	No.43 indoor unit error condition	41143	DI						
224	No.44 indoor unit error condition	41144	DI						
225	No.45 indoor unit error condition	41145	DI						
226	No.46 indoor unit error condition	41146	DI						
227	No.47 indoor unit error condition	41147	DI						
228	No.48 indoor unit error condition	41148	DI						
229	No.49 indoor unit error condition	41149	DI						

No.	Point description	Protocol address	Point type	Condition 1	Condition 2	Condition 3	Condition 4		Note
230	No.50 indoor unit error condition	41150	DI						
231	No.51 indoor unit error condition	41151	DI						
232	No.52 indoor unit error condition	41152	DI						
233	No.53 indoor unit error condition	41153	DI						
234	No.54 indoor unit error condition	41154	DI						
235	No.55 indoor unit error condition	41155	DI						
	condition								
236	No.56 indoor unit error condition	41156	DI						
237	No.57 indoor unit error condition	41157	DI						
238	No.58 indoor unit error condition	41158	DI						
239	No.59 indoor unit error condition	41159	DI						
240	No.60 indoor unit error condition	41160	DI						
241	No.61 indoor unit error condition	41161	DI						

No.	Point description	Protocol address	Point type	Condition 1	Condition 2	Condition 3	Condition 4		Note
242	No.62 indoor unit error condition	41162	DI						
243	No.63 indoor unit error condition	41163	DI						
244	No.64 indoor unit error condition	41164	DI						

## 6.5 IGU02



MRV	LCAC			
	Smart Power	Super Match	R410A ON/OFF	R22 ON/OFF
√				

Model No.		IGU02	
No. of IU Controllable	For Centralized controller		
	For BMS system		40
	For third party devices		
	For Lonworks (IGU07)		
Protocol	Central control protocol		
	MRV protocol		√
	Modbus rtu		
	For Lonworks (IGU07)		
Compatible Control devices	Centralized controller	YCZ-G001,A004	
	Haier BMS system	HCM-01A,03,05,05A	√(and HCM-04)
	Third party devices	IGU07,HA-AC-KNX	
Power Consumption			√
Installation Method			Outside the OU
Compatible OU Type			Side and Top discharge OU; MRV W

- Brief

**Applicable range and relative certificate**

1.Applicable range

Temp. range: -30°C~52°C

Ambient temperature of controller: -30°C~52°C

Ambient humidity of controller: 10%~85%

Save temp. range of controller: -30°C~52°C

Altitude: 0~6000m

Voltage: 220Vac±10%

Frequency: 50Hz

2.Safe certificate: Conform with HR and CCC

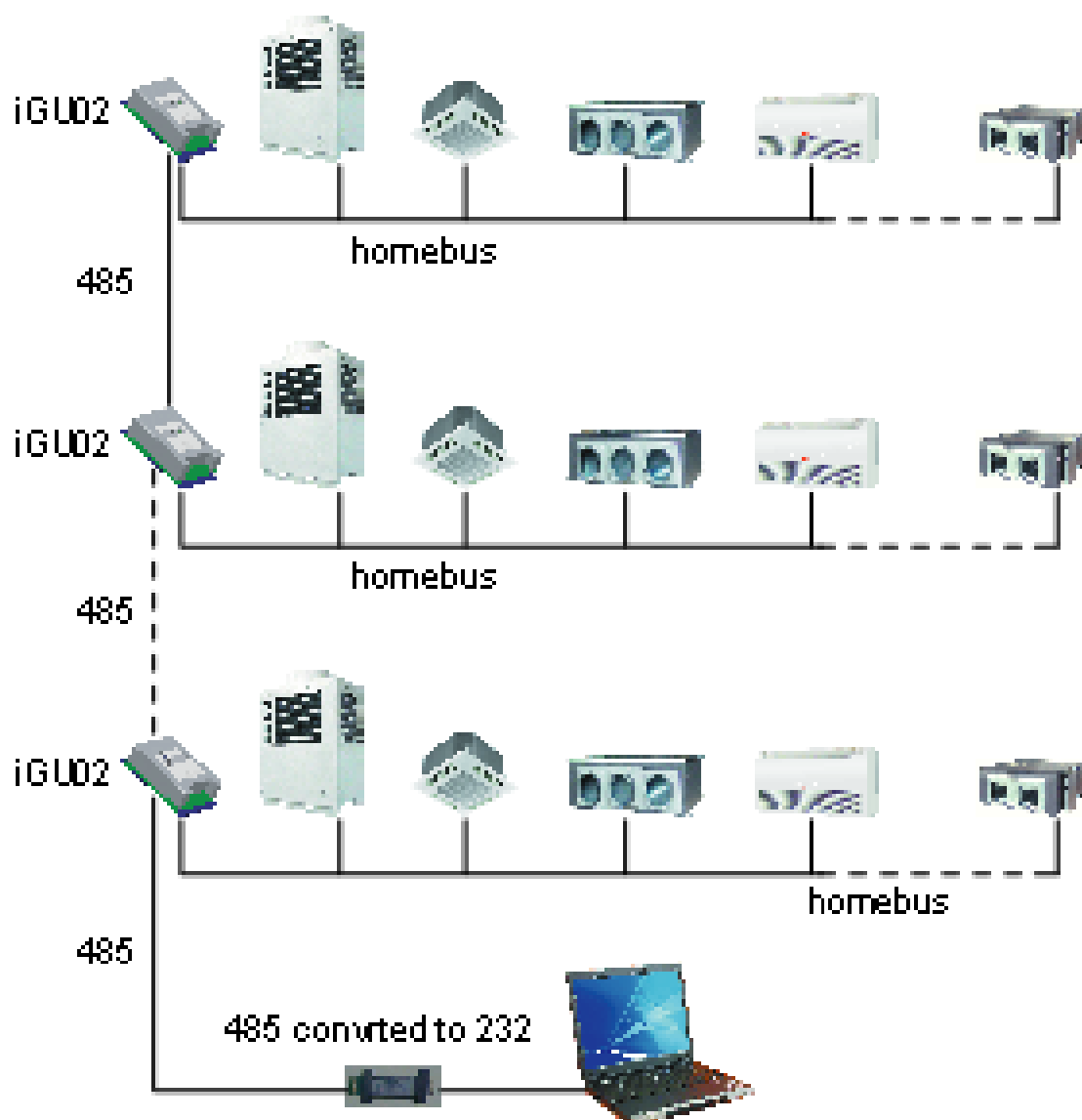
3.Environment certificate: conform with ROHS

**Reliable request**

1.Application standards:QB1238-91, GB4706.1-92, GB4706.12-95

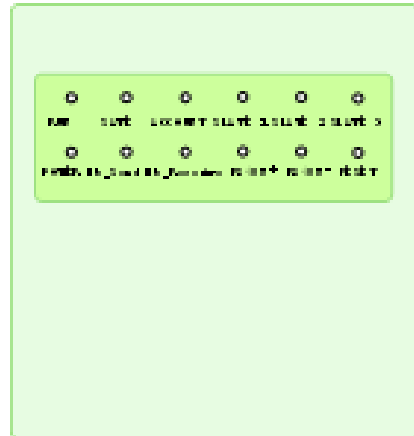
2.Special requirement

- Scheme of H-CACSII



• Appearance and dimension of protocol adapter

**Appearance:**



Dimension: 200\*130\*43(mm)

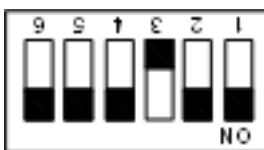
• Wiring request

1. Protocol adapter needs 220V AC power supply.
2. The communication line between indoor and outdoor and the bus line 485 among the protocol adapters should be through steel wire sleeve in the H-CACSII.
3. Set the indoor central address and the indoor/outdoor unit address by hand.
4. The system with H-CACSII should not set the group function of wired controller.

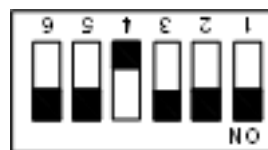
**Dip switch setting:**

ON: 0; OFF: 1

Left:4

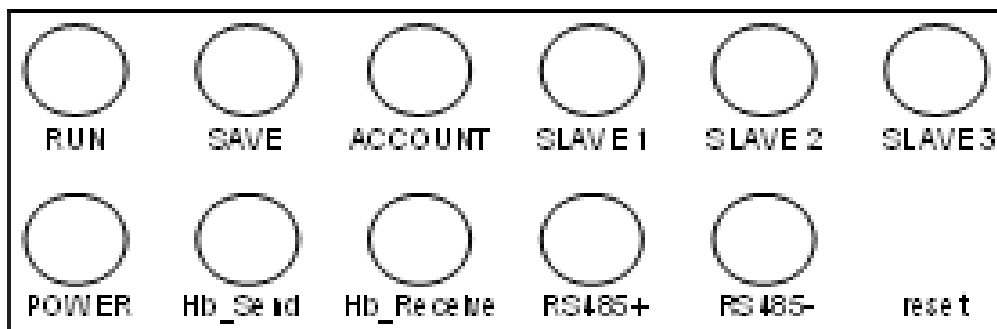


Right:8

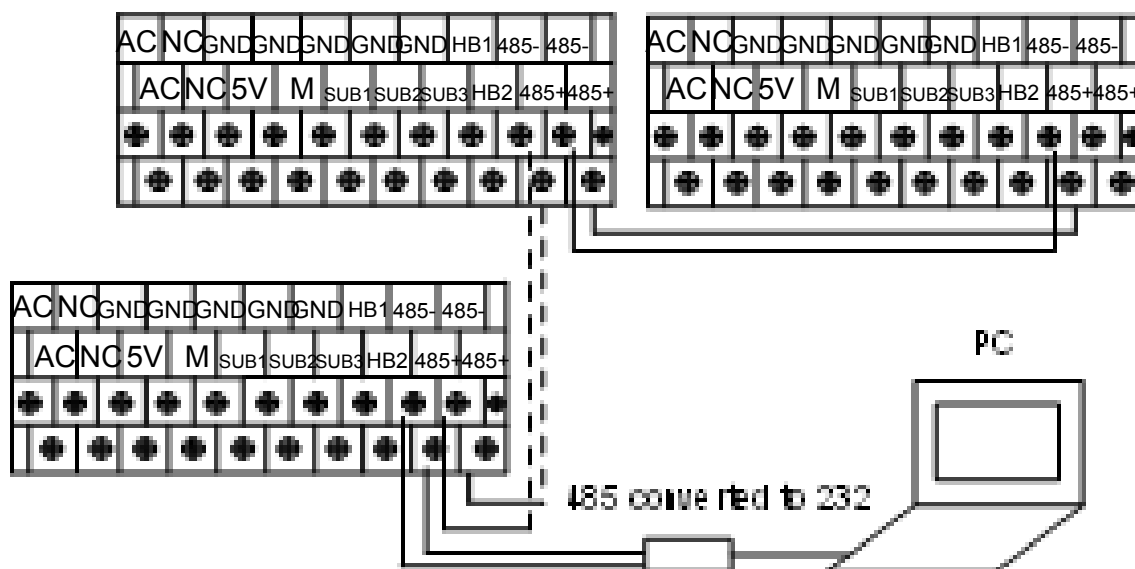
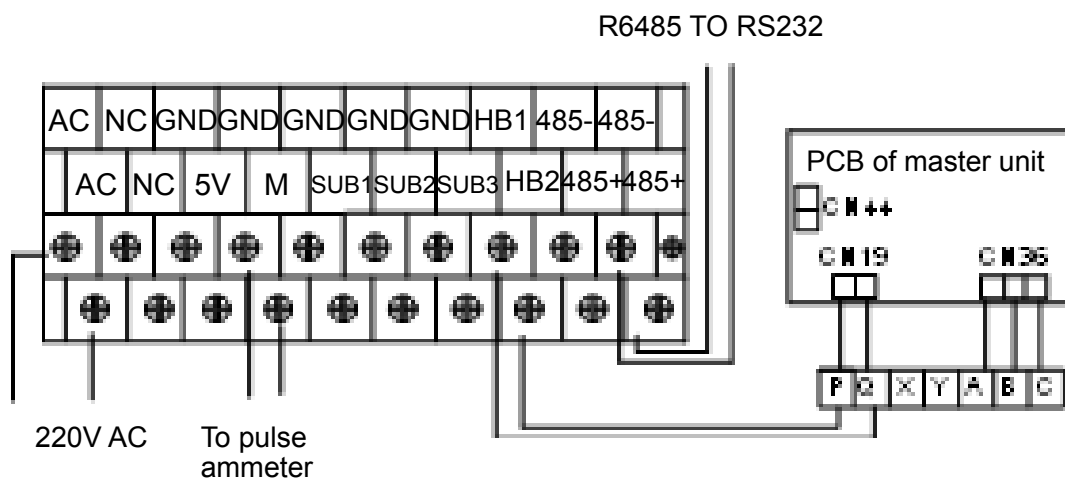


Shows address of IGU02, address range: 1-32.

**Communication lamp definition:**



## Wiring terminal:



## Wirings:

1. Power supply wires: 220V AC, 50Hz.

Use requested specifications and fix it firmly.

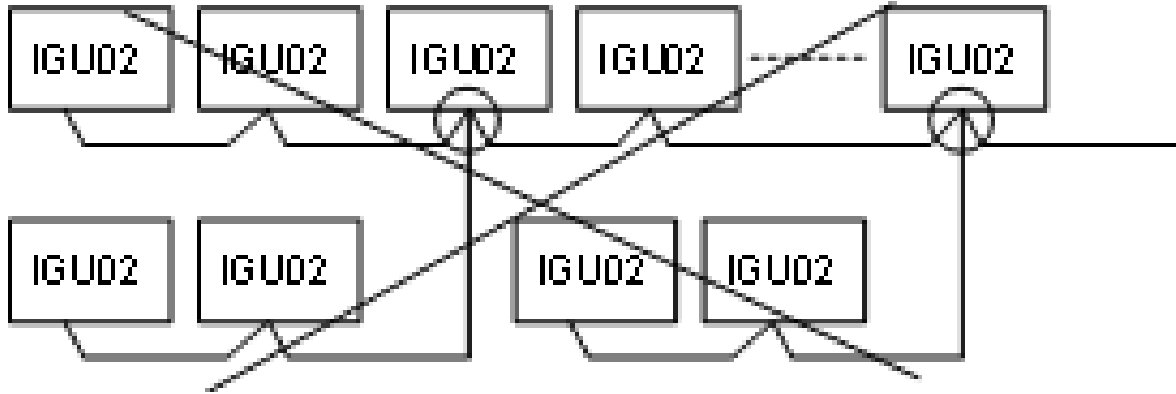
2. Communication wires:

Wires between IGU02 should use two polarity wires and loop connection.





Warning:  
The following connection (have interconnection) are not allowed:



Notes:

- (1)Communication wires between IGU02 & IGU02 should use twin-core shielding wires and need to connect to the earth.
- (2)Iron wire sleeve should be used when install the communication wires, and should separate from power wires;
- (3)Communication wires have polarity request;
- (4)Maximum total communication wires length is 500m.

- 3. Maximum 40sets indoor units should be used in Each outdoor system;
- 4. When use IGU02, indoor units address should be set manually, and indoor units address setting should from No.0 to the last one in each set outdoor unit system, and indoor & outdoor address (sw03) and central address (sw02) of same indoor unit should be keep the same.
- 5. The line between indoor and outdoor,the line between gateway and gateway, and pulse line at least 20cm away from strong electrical.

• Function description of IGU02 Modbus

In addition to the normal billing gateway function, you can also set the IGU02 as the Modbus module by setting the sixth bit at the back of IGU02, The address setting is the same as billing gateway.

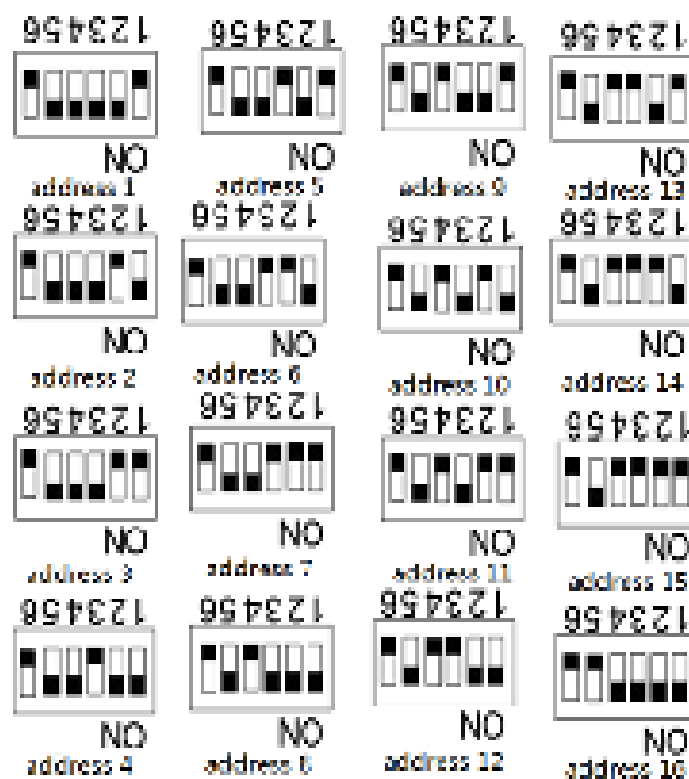


## Modbus Function setting

**IGU02Modbusfunction communication interface parameters:**

The ModbusSLAVE ID follows the address of IGU02
Function code: Inquire03H, Control10H
Communication parameters
Baud9600
Data bits8
Parity None
Stop bit 1

## Address setting for IGU02Modbusfunction:

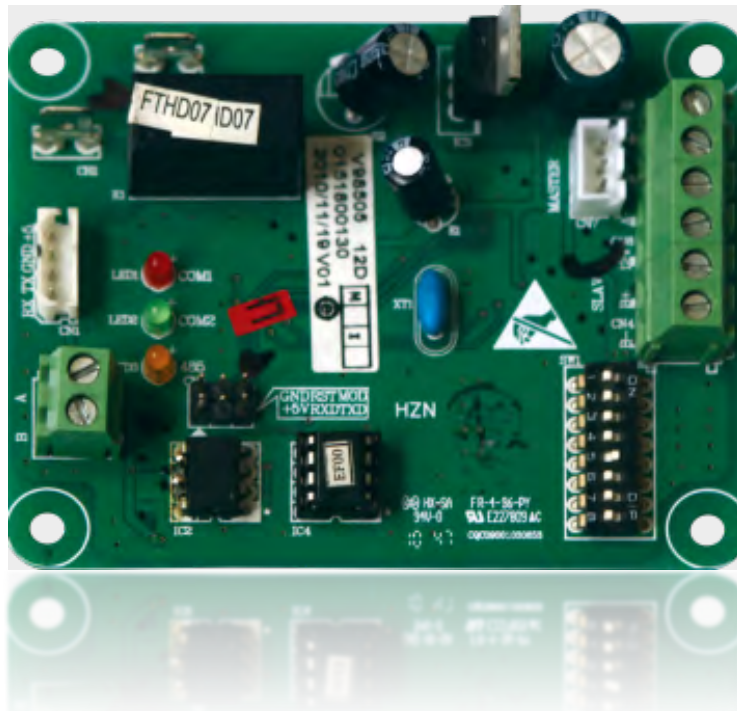


## External of Modbus point list:

Object Name	Address	Object Type	State Text	RW
Indoor1-40 Running mode control	40006---40045	AO/AI	0:Auto 1:Fan 2:Cool 3:Dry 4:Heat	R/W
Indoor1-40 Temperature control	40045---40085	AO	An Integer between 16 to 30	W
Indoor1-40 Fan speed control	40086---40125	AO/AI	0:Auto 1:Low 2:Normal 3:High	R/W
Indoor1-40 Temperature	40126---40165	AI	Minus 64 is Temperature	R
Indoor1-40 Start and stop control	40166---40205	DO/DI	0:OFF 1:ON	R/W
Indoor1-40 Error code	40206---40245	DI	0:Normal 1:Faise	R

## 7. Adapter

### 7.1 YCJ-A002



MRV	LCAC			
	Smart Power	Super Match	R410A ON/OFF	R22 ON/OFF
	√	√	√	√

- RS-485 protocol
- Double switch function
- Communicate with centralized controller or BMS
- Communicate with remote devices

## • Functions Introduction

Remote control detector (short form: Detector) is an essential equipment of remote monitor system of Haier commercial A/C. By connecting the interface in indoor units or outdoor units, this detector can reach functions of remote and central control.

### Communication function

1. Communication with A/C, By fixing the terminal with six-pin, communicate with two same models (Maximum two units). When connects with two units, it can achieve the function of double switching, control the operation of A/C and check information of working and fault according to internal control or query requirement in detector.

2. Communication with central controller

Communicate with central controller via RS-485 interface bus (A,B), receiving an order from central controller according to the unit's address which be set by internal switches. Answer the information of operation and malfunctions.

3. Communication with remote devices

Haier open the communication protocol of the RS-485 interface, where located in detector. Customers can develop the remote-control solution with this protocol, no need other accessories.

### Double Switching function

Double Switching function:

In order to increase the stability of A/C, detector has the function of double switching, you can choose single unit mode or double switching mode by setting internal switch.

When you choose single unit mode, detector will control unit A according to the setting information. When you choose double units mode, the function of double switching is available.

During the normal operation in double switching, under the control of detector, one unit works while other one in standby mode. When the switching time comes, the unit which was in standby mode at the beginning will be turned on and the unit which worked before will continue working for 30 minutes before goes into standby mode.

When any unit has malfunctions, the detector will stop time counting and wake up another unit. After the waking up, detector will turn the unit which has malfunction into standby and send the fault information out, when solve the problem, the double switching function will be recovered automatically.

If the room temperature can't reach the setting value, that means the load of system is too big, the detector will stop time counting and wake up another machine until the temperature reaches the setting value. The switching frequency is 12 hours/ one time.

### Order setting function

There is 8-bit DIP switch inside detector, up to D8 bit. They are used to set the single-unit mode or double switching mode.

D7, D6, D5, D4, D3, D2, D1, are used to set order of units (When in central control mode) Or time of double switching (When in double switching mode)

### Display function on operated situation

There are total three lamps in detector, yellow lamp indicates central control, red and green lamps indicate the communication with indoor units. When communication goes well, each lamp will flash at frequency of 0.5s, When communication has problem, the lamps will flash at frequency of 1s, then stop flashing 2S.

### Delayed-control function

When composing the network of central control by RS-485, in order to decrease the impact to electrical grid, you can choose the function of delayed-control of detector, the delayed time is generated by detector automatically.

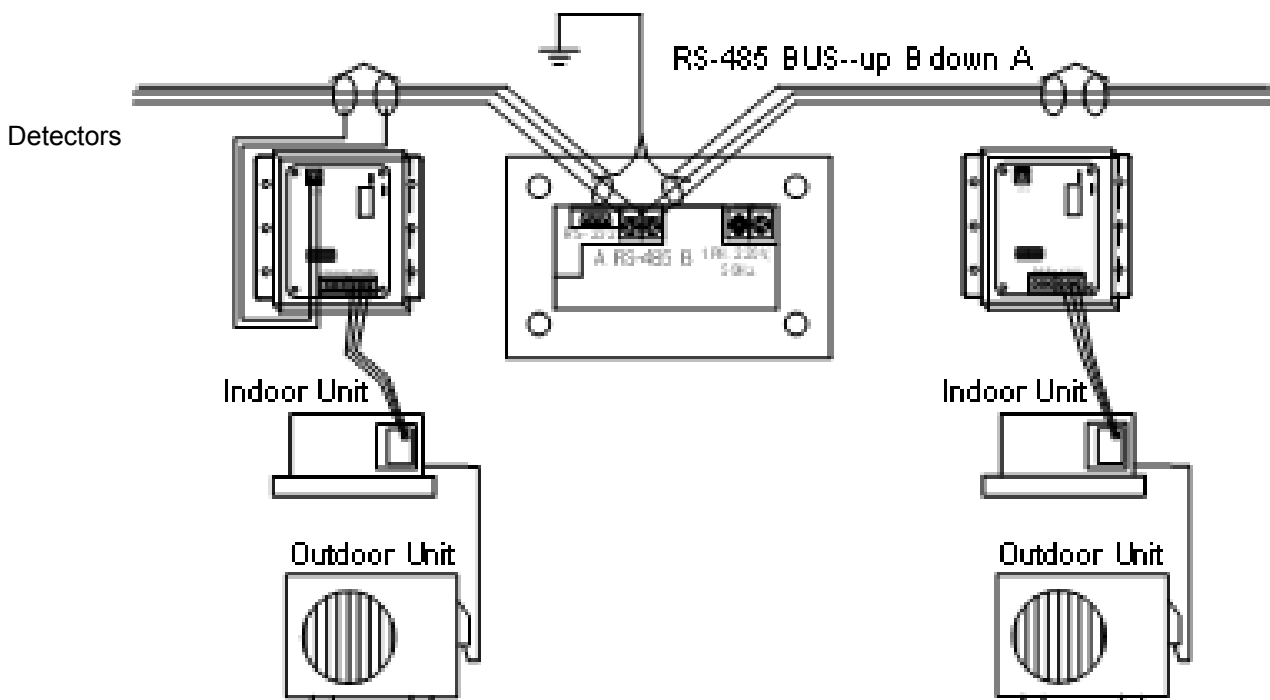
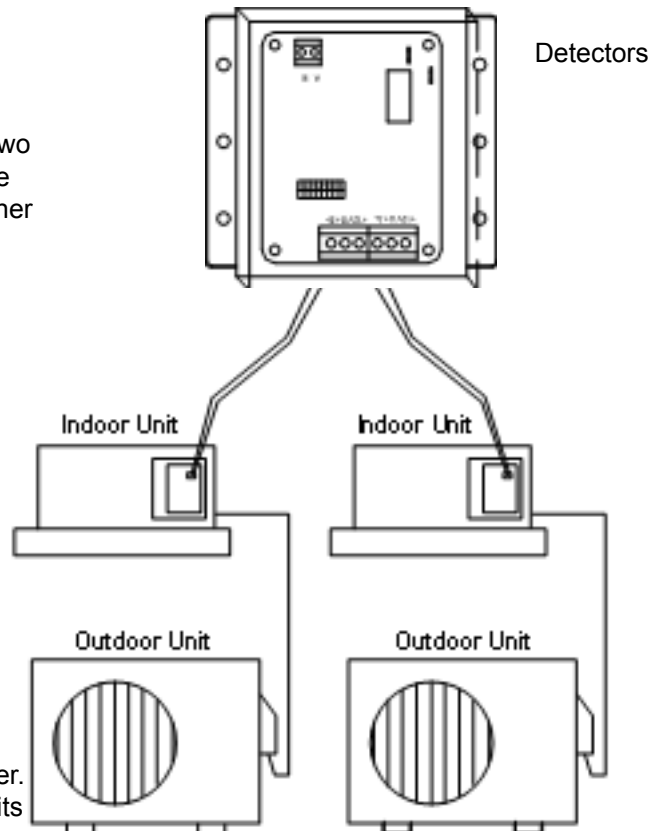
- Introduction of system

### Instruction on double switching function

By fixing the terminal with six-pin, communicate with two same models(Maximum two units) .Choose the double switching mode by setting the switch. There are no other accessories during the sole function of double switching. The time of switching can be chosen to 8,10,12,24 hours, the detail setting method please check the setting table attached.

### To achieve function of group control by central controller

Detector connects with one unit through the interface 12V, A+, A-which be fixed by terminal of three cores, the setting mode should be single unit mode, Set the address as the program ,the detailed setting and switch position please check attached summary. To achieve the group control function by central control, you need connect with central controller. Each detector connect with central controller through its RS-485 interface, two-core screw terminals (A,B)



- Maintenance

### Status Check

- When in single unit mode, control A unit , When there is malfunction on A unit, detector will query and upload the information.  
When in double switching mode, A and B units, once there is one unit has problem, the detector will check and upload the information.
- You can check the situation of detectors by lamp display, When units go well, each lamp will flash at frequency of 0.5s flash on and 0.5s flash off, When unit has problem, the lamps will flash at frequency of 1s flash ,then stop flashing 2S. Yellow lamp indicates the central control, red lamp indicates communication of unit A , Green lamp indicates unit B.

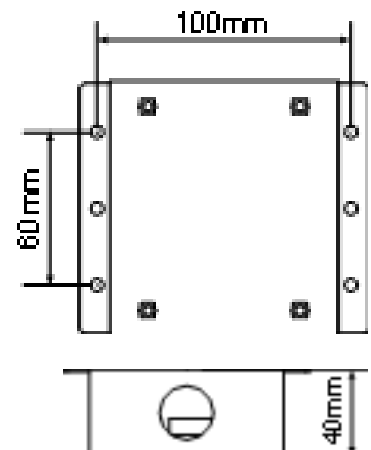
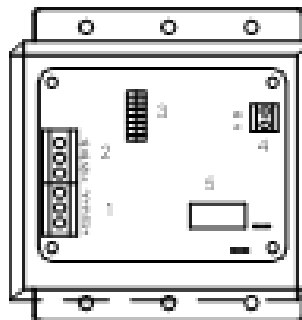
### During the maintenance, be sure to turn the power off

- Wipe dry with a soft cloth carefully in order not to damage the electrical parts.
- It's forbidden that clean unit by gasoline, scouring powder and other chemical cleaners.
- Check connection situation of the wires ,make sure there is no crack and loose.

- Exterior Dimensions

Description on interface:

- 1--Interface of UNIT A, 3-cord cable, maximum length is 10m
- 2--Interface of UNIT B, 3-cord cable, maximum length is 10m
- 3--DIP switch , use for choose address and functions
- 4--Interface of central control , offers standard 485 communication.
- 5--Fault output. It closes during the normal situation while open during the abnormal case.



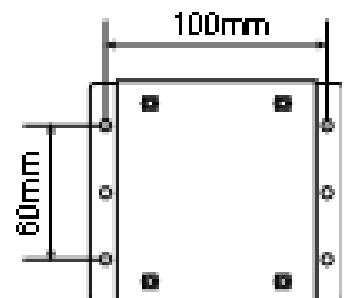
- Installation

Fix the detectors by screws check the right space data of screws.

Fix the detectors on the wall or other safe place, make sure there is no water or other possible biological enter

#### 1. Principles of design on group control network.

- 1) Detector is essential part , in order to keep proper responding speed and reliability on communication ,for one central controllers, maximum quantity of detector is 64 pcs.
- 2) A/C should be ready for network , be sure to be installed and used according to instructions.
- 3) The location of detectors can not be far away from units, no exceed the limitation of pipe length
- 4) Locate the address number from small to big orders
- 5) Power supply of detector comes from Indoor units,12V, be sure to avoid connecting with strong current .Single wire should be connect with land.
- 6) Total length of wire for central control is limited in 1000 meters
- 7) Two ends of A wire and B wire is the electrical resistance with 100 Ohm
- 8) Single-Point grounding shielded wire bus ,suggest that locate it in middle position ,close to central controller.
- 9) The installation position should be placed in the middle place of communicated BUS and close the ground-wire.



2.Connection between detectors and A/C: Detector connects with A/C through the interface 12V, A+, A-, 12V, B+, B-, which be fixed by terminal of six cores. Communicated with A, B units(Maximum two units). detectors and A/C use the same wire, one end of wire connect with PCB. If the machines don't run well, please try to change + pole and - Pole. or check with indications from lamps.

3.After communicated wire location, start to connection of detectors and communication bus wire: Hand in hand connecting way, all the A port keep one BUS line, all the B ports keep another bus line. Communication BUS line ground in the middle and total length of wire is limited within 1000m.

4.Testing: Power on the units, central controller monitors the detectors and units on the communication BUS line

5.switch positions of detector:

1)There are 8 digital switch in detector, 0 means OFF, 1 means ON.

2)The eighth digital is used for set single or double switch modes, OFF means single mode ,ON means double switch mode: When in double switching mode, 7th and 6th used for choose the switch time, 5th is used for choose the temperature when two units work. 4th 3rd 2nd 1st digit are used for choose address, maximum quantity of units is 16, when choose the single mode, maximum quantity of detector are 128 pcs.

Definition of switch functions:

SW01								Definition
[8]	[7]	[6]	[5]	[4]	[3]	[2]	[1]	
0	--	--	--	--	--	--	--	Single mode
1	--	--	--	--	--	--	--	Double switch mode
--	0	0	--	--	--	--	--	Double switch time 12 hours
--	0	1	--	--	--	--	--	Double switch time 10 hours
--	1	0	--	--	--	--	--	Double switch time 8 hours
--	1	1	--	--	--	--	--	Double switch time 24 hours
--	--	--	0	--	--	--	--	Temperature is 32 degree during the double units operation
--	--	--	1	--	--	--	--	Temperature is 28 degree during the double units operation
--	--	--	--	0	0	0	0	Address of central control=1 during the double units operation
--	--	--	--	0	0	0	1	Address of central control=2 during the double units operation
----								----
--	--	--	--	1	1	1	0	Address of central control=15 during the double units operation
--	--	--	--	1	1	1	1	Address of central control=16 during the double units operation
--	0	0	0	0	0	0	0	Address of central control=1 during the single units operation
--	0	0	0	0	0	0	1	Address of central control=2 during the single units operation
----								----
--	1	1	1	1	1	1	0	Address of central control=127 during the single units operation
--	1	1	1	1	1	1	1	Address of central control=128 during the single units operation

### Parameter and accessories

Power	DC 12V
Power consume	Less than 3W
Code of detector	0151800130
Accessory	Communication wire, code 0010452854, color: white, yellow and rede.



## Haier Commercial Air Condition

ADDRESS: No.1 Haier Road, Hi-tech Zone, Qingdao 266101 P.R.China

Web: [Http://www.haier.com](http://www.haier.com)