ORIGINAL MANUAL

Kaysun

# OWNER'S MANUAL


KCCHT-05 MODBUS

Thank you very much for purchasing our product.
Before using your unit, please read this manual carefully and keep it for future reference.

- This manual gives detailed description of the precautions that should be brought to your attention during operation.

- In order to ensure correct service of the wire controller, please read this manual carefully before using the unit.

- For convenience of future reference, keep this manual after reading it.

# Contents

# 1 Safety Precautions

The product and Operation and Installation Instructions record the following content, including the operation method, how to prevent harms to others and property losses, and how to use the product correctly and safely. Read the text after understanding the content (identification and marker maps) below carefully, and observe the precautions below.

**⚠ Caution**

Read the safety precautions carefully prior to installation.
The important safety precautions are provided below and must be observed.
Meanings of marks:

⚠ Caution  Means improper handling may lead to personal injuries or material damages.
⚠ Warning  Means improper handling may lead to death or serious injury.
After the installation work is completed, confirm that the trial operation is normal and hand over the manual to the customer for keeping.

[Note]: So-called "injuries" mean the harms not requiring hospitalization or long-term treatment, generally referring to wounds, burns, or electric shocks. Material damages refer to property and material losses.

# 1 Safety Precautions

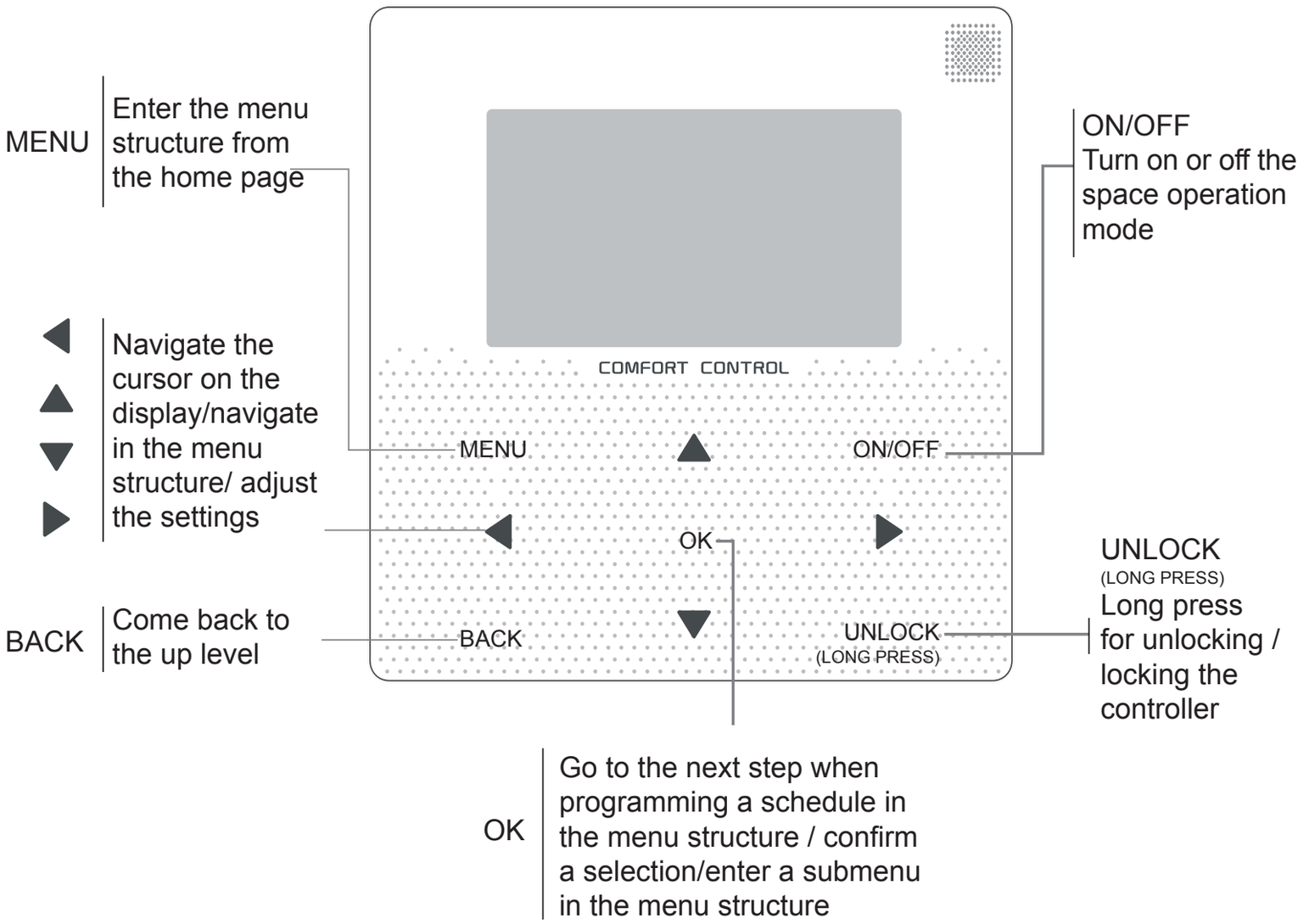
| Icon | Name |
|---|---|
|  | It indicates "prohibited". The specific content of prohibition is provided using graphics or text in the icon or nearby. |
|  | It indicates "mandatory". The specific mandatory content is provided using graphics or text in the icon or nearby. |

| | | |
|---|---|---|
|  Warning | Entrusted installation | Entrust your distributor or a professional to install the product. The installation operator must have acquired the relevant professional knowledge.<br>In case of independent installation, wrong operations will lead to a fire, electric shock, or injury. |
|  Caution in Use | Prohibited | Do not spray combustible spray to the wired controller directly; otherwise a fire may be caused. |
| | Prohibited | Do not perform operations with a wet hand or allow water to enter the wired controller; otherwise the wired controller will be damaged. |

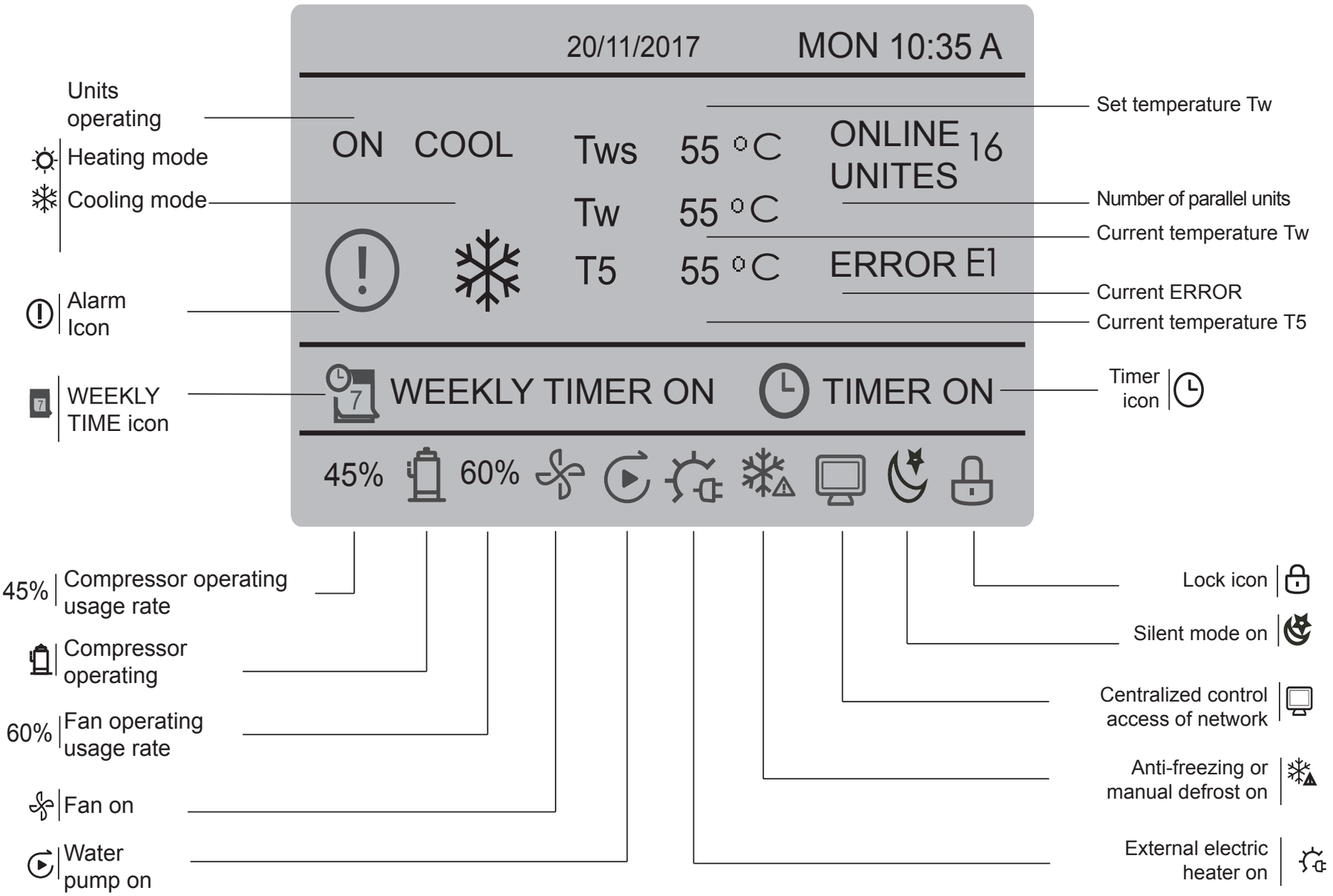
**⚠ Caution**

- Do not install the product at a place where flammable gas easily leaks. Once flammable gas leaks and stays around the wired controller, a fire may be caused.

# 2 Overview of Wired Controller



# 2 Overview of Wired Controller



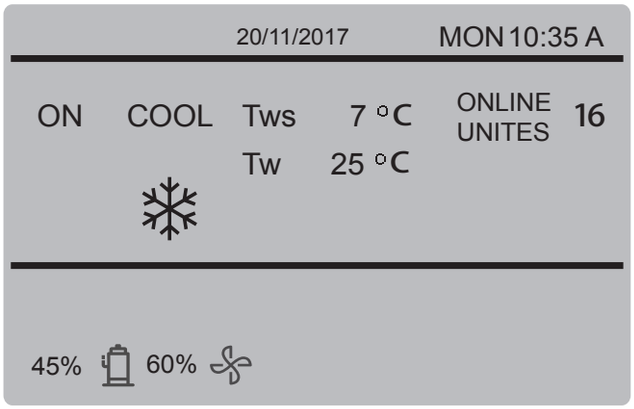
# 3 Menu Operations

## 3.1 Unlocking/Locking Operation

When the wired controller is locked, press and hold the "UNLOCK" button for 3s to unlock it, when "🔓" is not displayed; in the unlocked status, press and hold the "UNLOCK" button for 2s to lock it, when "🔒" is displayed and the wired controller cannot be operated; when there is no operation for continuous 60s on any page, the wired controller returns to the home page and is locked automatically, and the locking icon is displayed.

## 3.2 Power-on/off

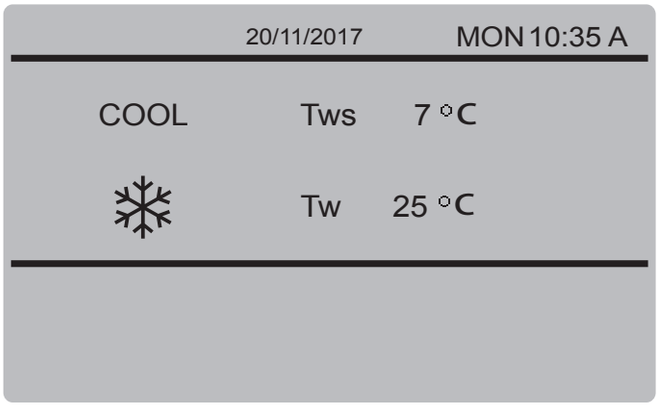
When the wired controller is unlocked and the unit is on, "ON/OFF" can be pressed to power off the unit under the home page only; when the unit is off, press "ON/OFF" to power on the unit. The mode can be switched under the power-off mode only.



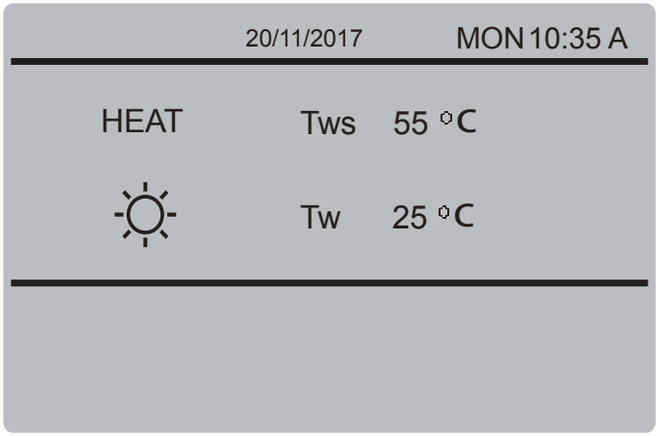

## 3.3 Setting Mode

In Unlock mode, press the "MENU" button to enter the menu setting interface, press the "▼" and "▲" buttons to select "MODE" and set a mode, and press the "OK" button as shown in the above figure to access the submenu (mode setting). As shown below: Three modes available.

**a.** Cooling mode



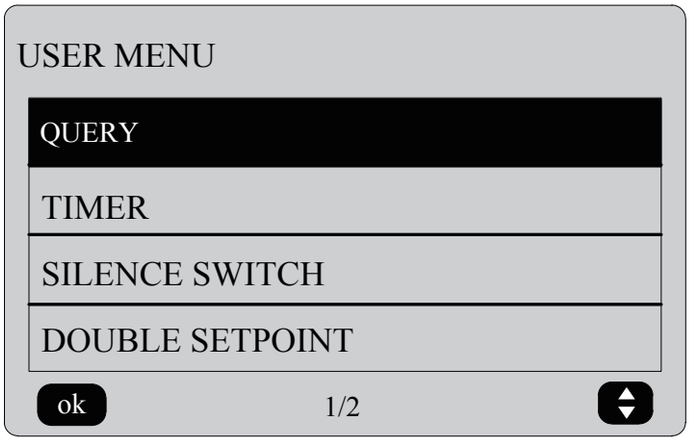

**b.** Heating mode

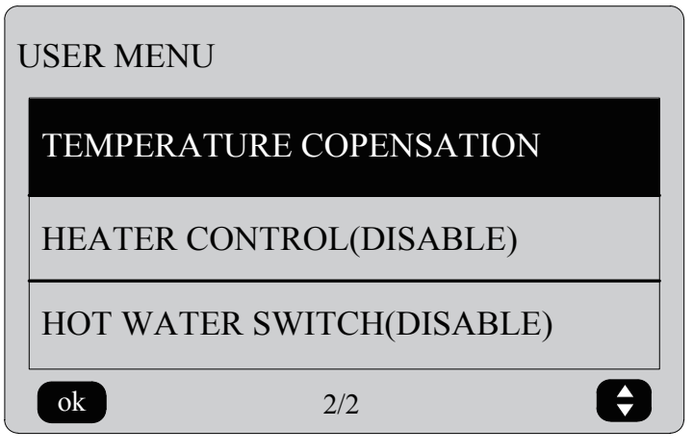


When the current mode button is selected (blinking), press "◄" and "►" to set a mode or temperature, and then press "▼" and "▲" to adjust the mode and set temperature value. After setting, press the "OK" button to save the setting and go back to the home page; or press the "BACK" button to go back to the previous interface; if there is no subsequent operation in 60s, the setting is saved automatically, and the system returns to the home page.

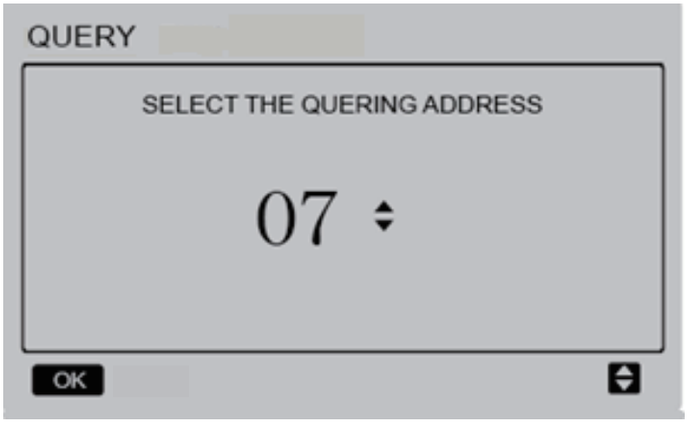
## 3.4 User Menu

Select "USER MENU" to enter the user menu. The interface display is as follows:

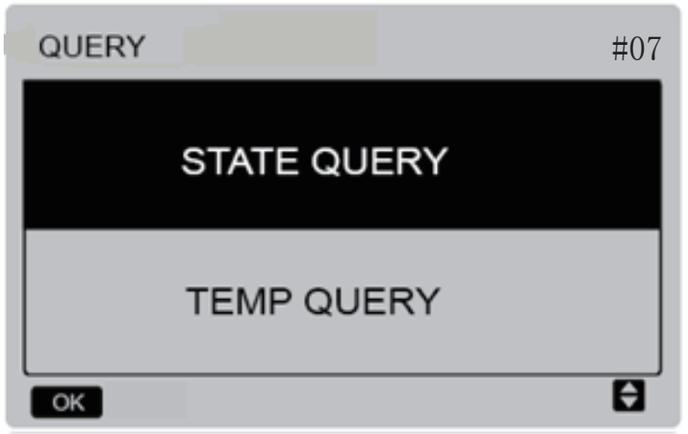


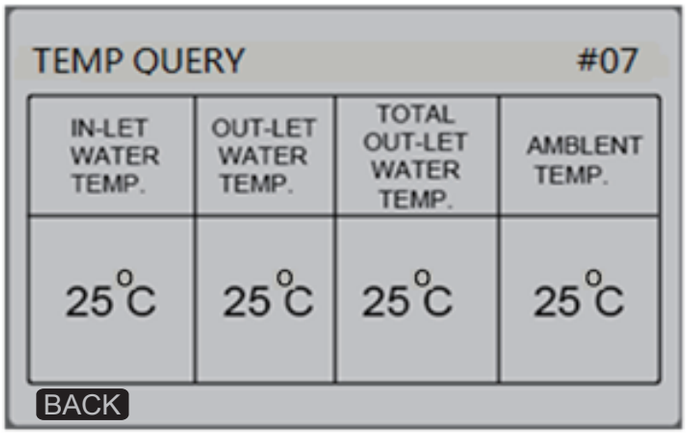




Select "QUERY" in the "USER MENU" interface to access the query function. The interface display and operation are as follows:




The user first uses the "▼" and "▲" buttons to select the address of module to view (the offline address is skipped automatically). Press the "OK" button to access the next submenu or press "BACK" to go back to the previous interface; during operation on the menu page, press "BACK" to go back to the previous interface. After entry, the interface is displayed as follows:



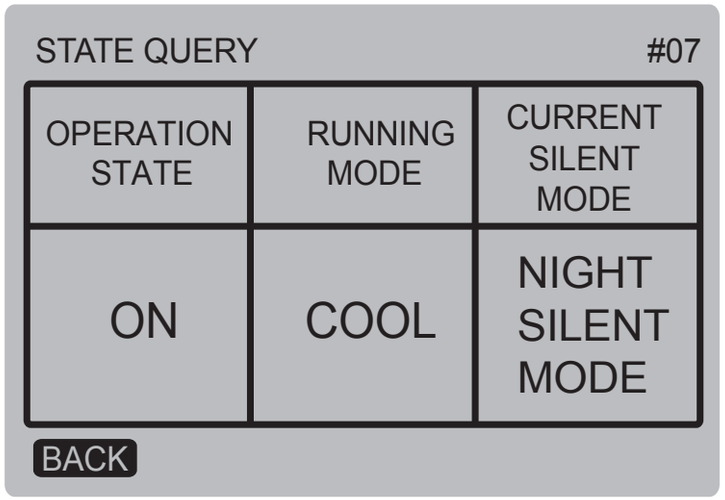



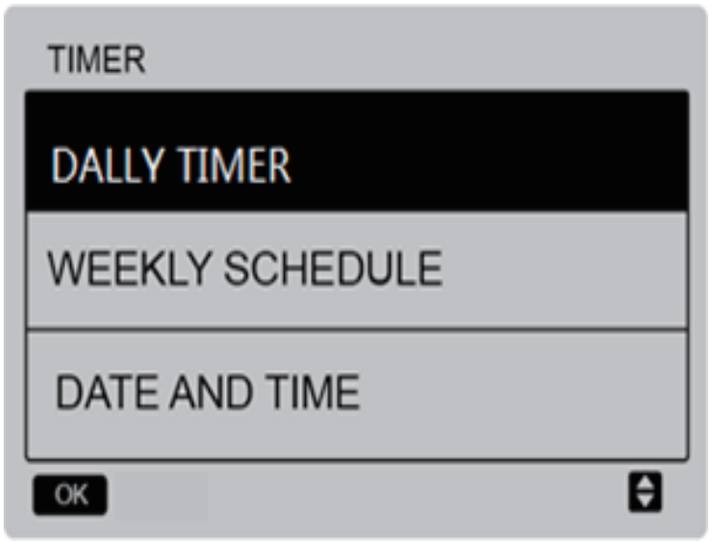

◆ State query:

Select "STATE QUERY" in the "QUERY" interface, and press the "OK" button to enter the interface. The interface display is as follows:

◆ Setting the timer:

Select "TIMER" in the "USER MENU" interface, and press the "OK" button to enter the interface. The interface display is as follows:

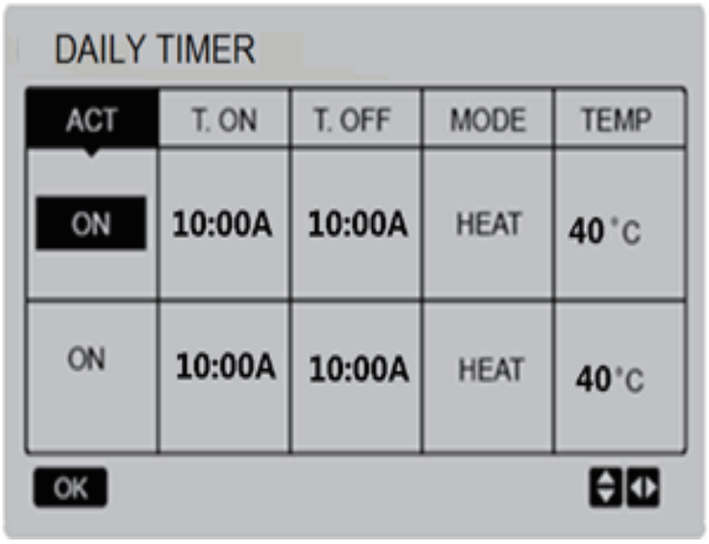



◆ Temperature query:

Select "TEMP QUERY" in the "QUERY" interface, and press the "OK" button to enter the interface. The interface display is as follows:

Select "DAILY TIMER" in the "TIMER" interface, and press the "OK" button to enter the interface. The interface display is as follows:




Only one setting is enabled between "DAILY TIMER" and "WEEKLY SCHEDULE". If any of the pattern in "WEEKLY SCHEDULE" is set to ON, "DAILY TIMER" is disabled. "DAILY TIMER" can be set across a day, but "WEEKLY SCHEDULE" can't.

Users can set two pieces of timer, and set the ON and OFF time (set the interval of time to 10 minutes), operation mode(COOL mode, HEAT mode at single water pump control mode.

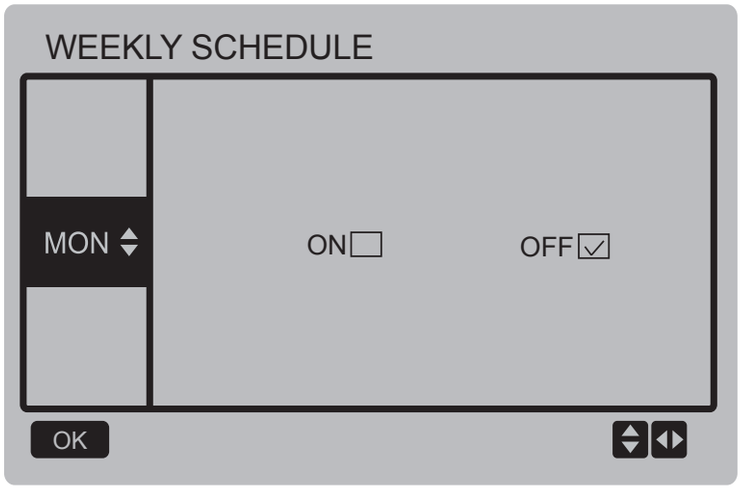
When the cursor stays at "ACT", press the "ON/OFF" button to open or close daily timer function (default "OFF", indicating that the timer of this segment is invalid), and press the "◄" and "►" buttons to select the start time, end time, mode and temperature to be set, and then use the "▲" and "▼" buttons to adjust the time, mode, and temperature value. After setting, press "OK" to confirm saving, or press "BACK" to cancel setting and return to the previous interface.

If Time1 ON is set the same as Time1 OFF, the setting is invalid, the ACT option for the timer of this segment jumps to "OFF", the setting of Timer2 is the same as that of Timer1, and the timing interval of Time2 can cross with that of Time1.

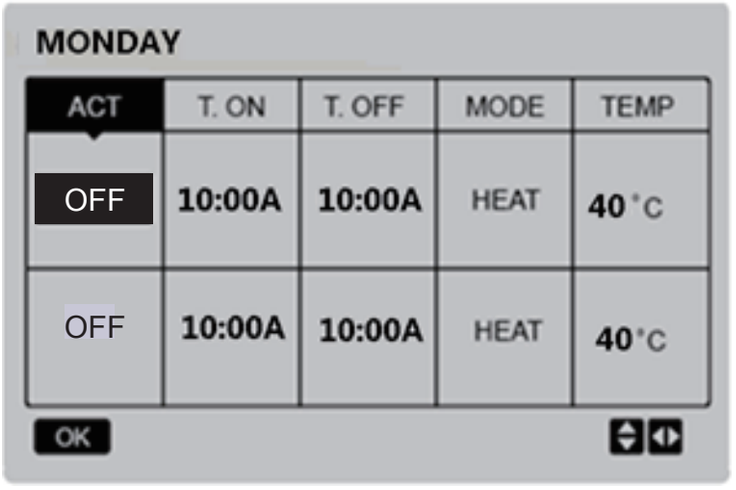
For example, if Timer1 ON is set to 12:00 for Timer1 and Timer1 OFF is set to 15:00, then the values of Timer2 ON and Time2 OFF can be accessed in the range of 12:00-15:00. If timing intervals cross each other, the timed-on signal is sent in the case of Timer ON, and the timed-off signal is sent in the case of Timer OFF. After timer setting is completed, the corresponding prompt is displayed on the main interface.

◆ Setting the weekly schedule:

Select "WEEKLY SCHEDULE" in the "TIMER" interface, and press the "OK" button to enter the interface. The interface display is as follows:




Press "▲" and "▼" buttons to set the day the user want from Monday to Sunday. and press the "OK" button or press "◄" and "►" buttons to choose "ON" then press "OK" button to enter the time setting interface. The interface is as follows:

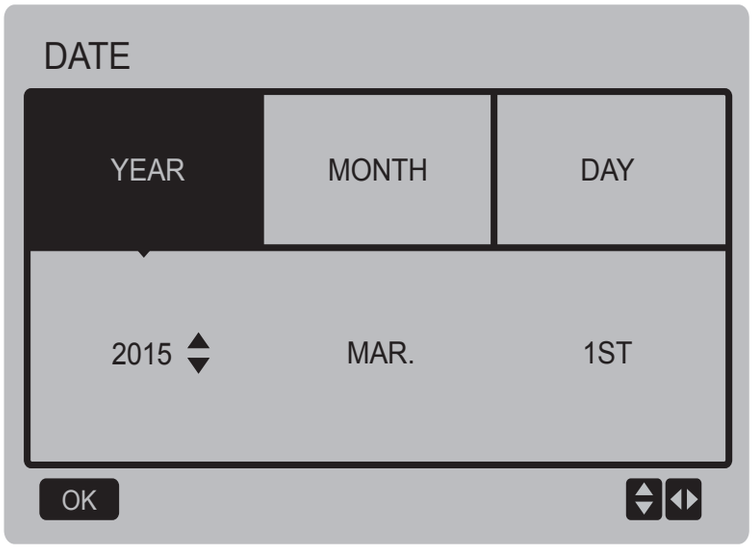


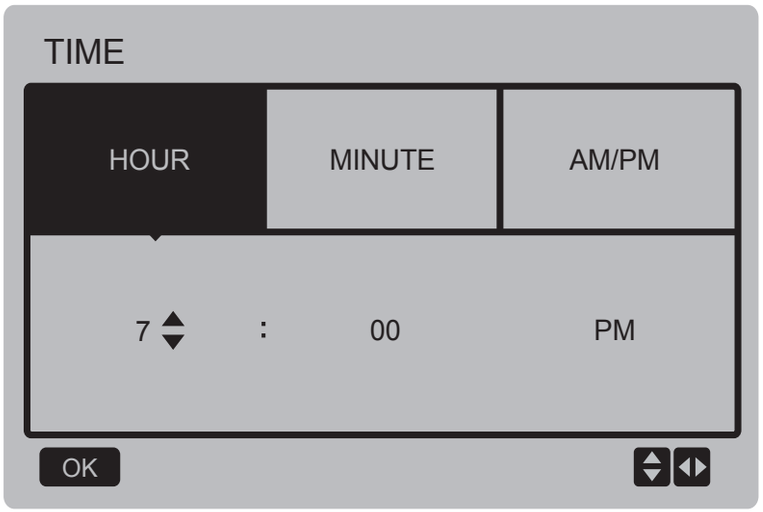

When the cursor stays at "ACT", press the "ON/OFF" button to open or close daily timer function (default "OFF", indicating that the timer of this segment is invalid), and press the "◄" and "►" buttons to select the start time, end time, mode and temperature to be set, and then use the "▲" and "▼" buttons to adjust the time, mode, and temperature value. After setting, press "OK" to confirm saving or press "BACK" to cancel setting and return to the previous interface

◆ Setting date/time:

Select "DATE AND TIME" in the "TIMER" interface, and press the "OK" button to enter the interface. The interface display is as follows:

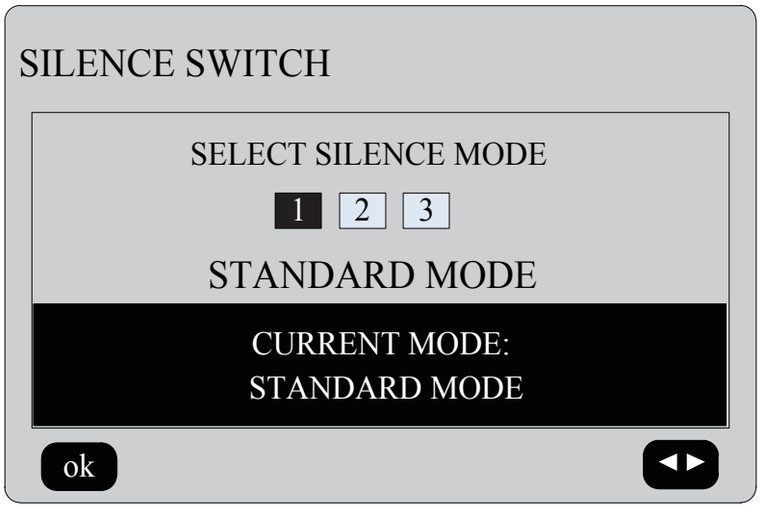
Press the "▲" and "▼" buttons to select the date and time to be set, and press the "OK" button to access the lower-layer submenu:



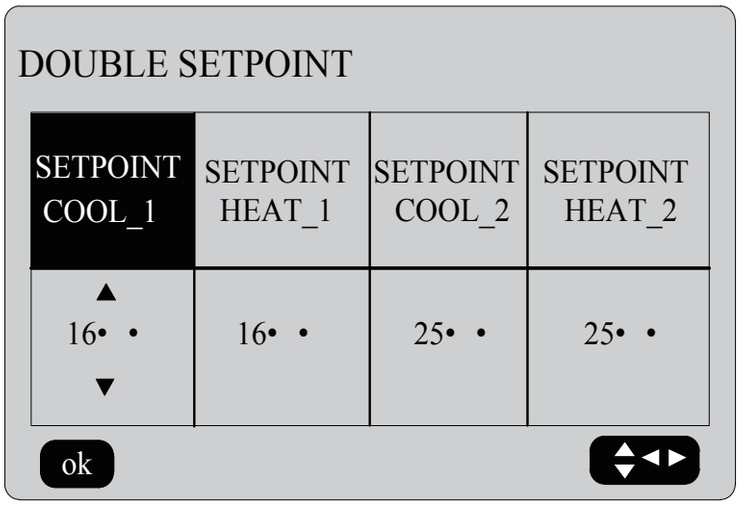

Operation instructions:
Press the "◄" and "►" buttons to select "YEAT", "MONTH" and "DAY", press the "▲" and "▼" buttons to adjust the parameter value, and press the "OK" button to save the setting.
Time setting operation instructions:
Press the "◄" and "►" buttons to select "HOUR", "MINUTE" and "AM/PM", press the "▲" and "▼" buttons to adjust the parameter value, and press the "OK" button to save the setting.

◆ Silent mode switch:
Select "SILENCE SWITCH" in the "USER MENU" interface, and press the "OK" button to enter the interface. The interface display is as follows:



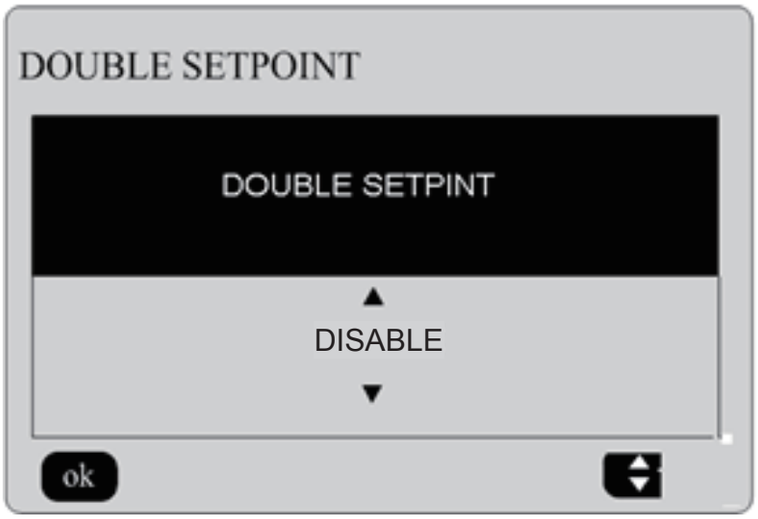
Press the "◄" and "►" buttons to adjust the parameter, and press the "OK" button to save the setting and return to the previous interface, or press the "BACK" button to cancel the setting and return to the previous interface.

After the silent mode is selected and opened, " " on the main interface is on.




◆ Double Setpoint:

Select "DOUBLE SETPIONT" in the "USER MENU" interface, and press the "OK" button to enter the interface. The interface display is as follows:




Press the "▲" and "▼" buttons to select the ENABLE and DISABLE, and press the "OK" button to save the setting.If setting the DISABLE then return to the previous interface.If setting the ENABLE then enter the interface as follows:

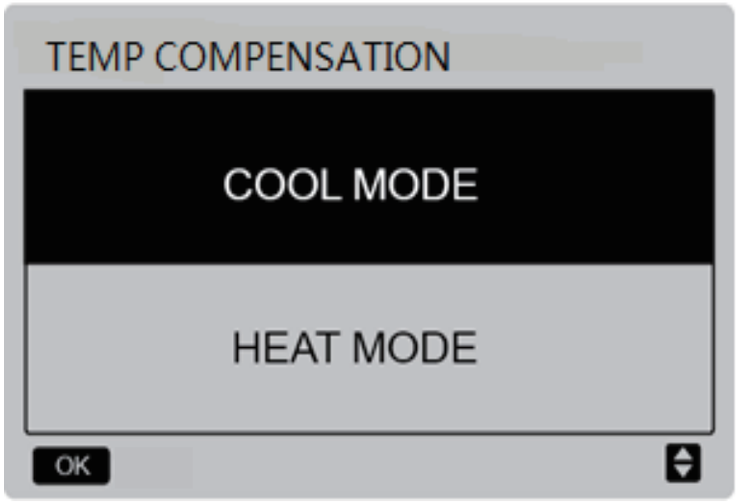
Operation instructions:

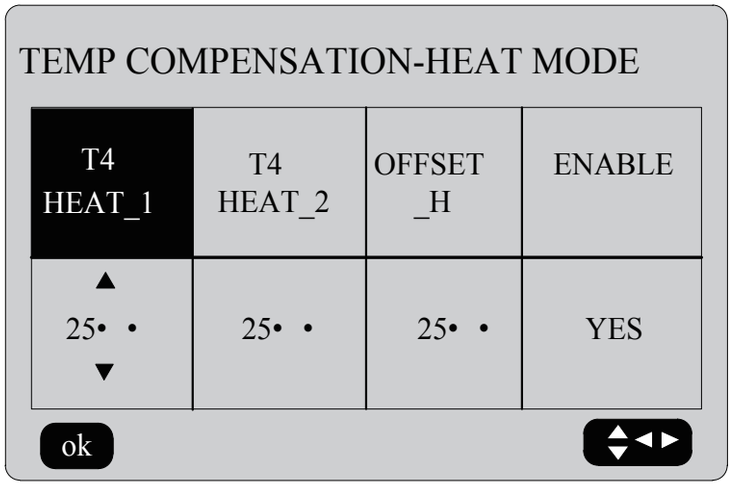
Press the "◄" and "►" buttons to select setpoint mode, press the "▲" and "▼" buttons to adjust the parameter value, and press the "OK" button to save the setting and return to the previous interface,or press the "BACK" button to cancel the setting and return to the previous interface.

The main control board tests if the TEMP-SWITCH port is closed, the units run according to the second target temperature,other wise, the units run according to the first target temperature.

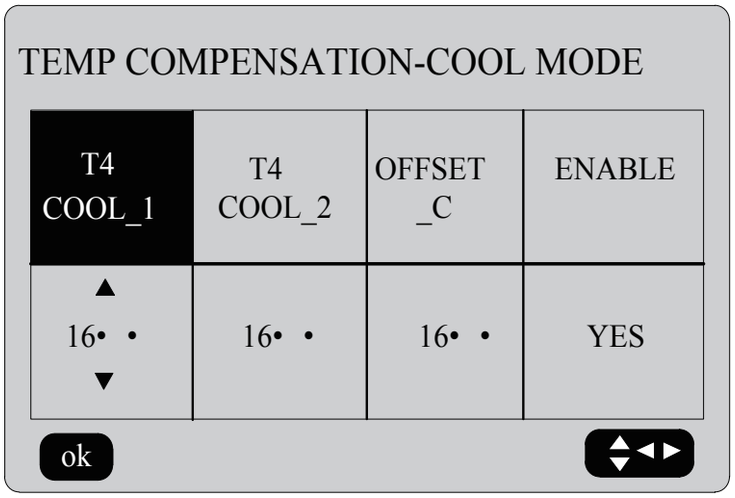
◆ Temperature compensation:

Select "TEMPERATURE COMPENSATION" in the "USET MENU" interface, and press the "OK" button to enter the interface. The interface display is as follows:



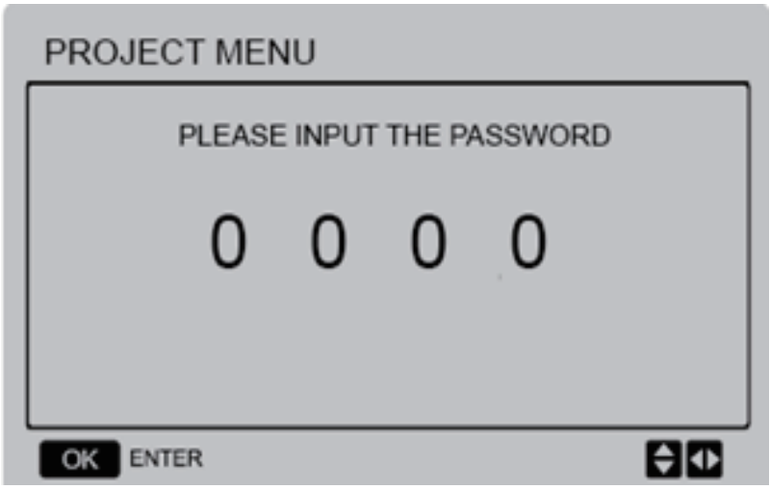

Press the "▲" and "▼" buttons to select the COOL MODE and HEAT MODE, and press the "OK" button to enter the interface. The interface display is as follows:




Operation instructions:
Press the "◄" and "►" buttons to select the cool mode or the heat mode, press the "▲" and "▼" buttons to adjust the parameter value.
press the "OK" button to save the setting and return to the previous interface,or press the "BACK" button to cancel the setting and return to the previous interface.
The value of T4 COOL_1 and T4 COOL_2 of temp compensation-cool mode need to satisfy the condition of T4 COOL_2-T4 COOL_1 >=0.

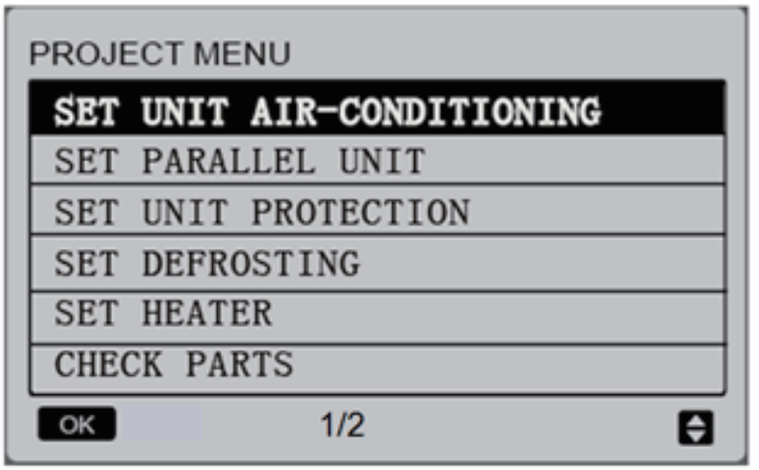
# 3.5 Setting PROJECT MENU

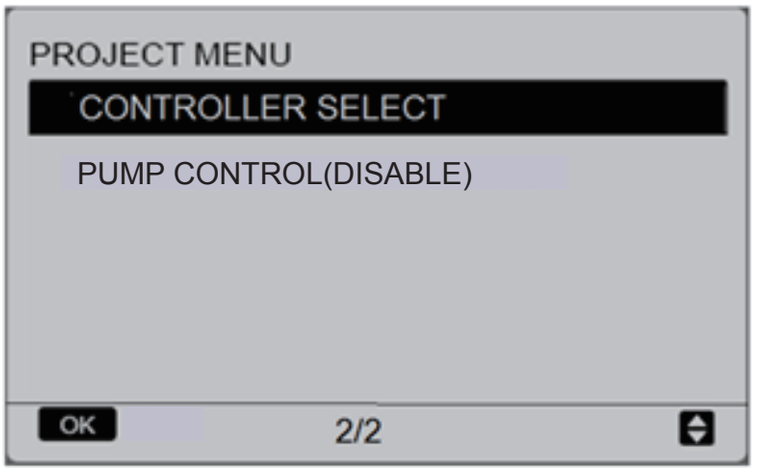
◆ Entering the password:
Select "PROJECT MENU", and press the "OK" button to enter the menu. The screen prompts the user to enter the password, as shown below:




The initial password is 6666 and cannot be changed. Press the "▲" and "▼" buttons to change the number to enter, and press the "◄" and "►" buttons to change the bit code to enter. After the number is entered, the display is not changed. After entering the password, press the "OK" button to enter the interface; press the "BACK" button to go back to the previous interface; the display is as follows if the input is incorrect:

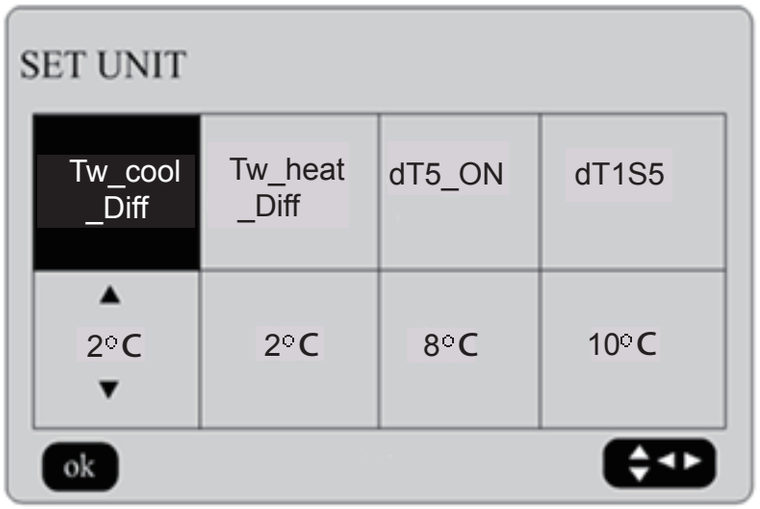

The query interface as follows is displayed if the input is correct:



◆ Set unit air-conditioning:

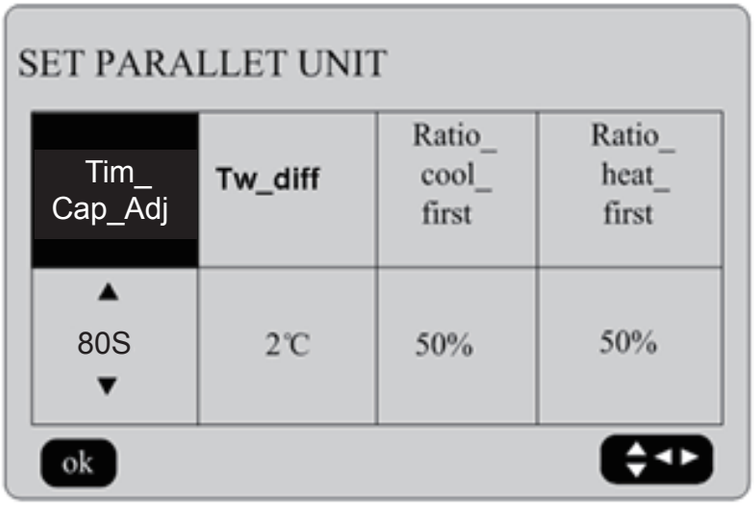
Select "SET UNIT AIR-CONDITIONING", and press the "OK" button to enter the interface. The interface display is as follows:




Press the "◄" and "►" buttons to select the desired option, and press "▲" and "▼" buttons to set the temperature and press the "OK" button to save the setting and return to the previous interface, or press the "BACK" button to cancel the setting and return to the previous interface. If there is no operation in 60 seconds, the wired remote controller will return to the home page.

◆ Set parallel unit:

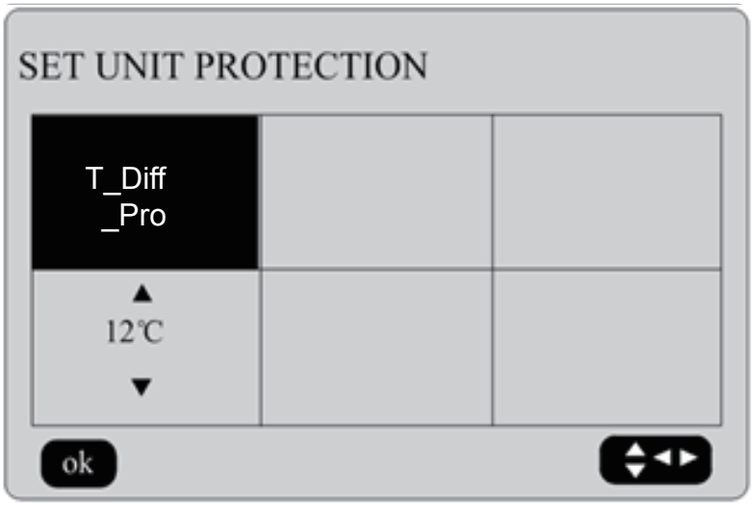
Select "SET PARALLEL UNIT", and press the "OK" button to enter the interface, The interface display is as follows:




Press the "◄" and "►" buttons to select the desired option, and press "▲" and "▼" buttons to set the temperature and press the "OK" button to save the setting and return to the previous interface,or press the "BACK" button to cancel the setting and return to the previous interface. If there is no operation in 60 seconds, the wired remote controller will return to the home page.

◆ Set unit protection:

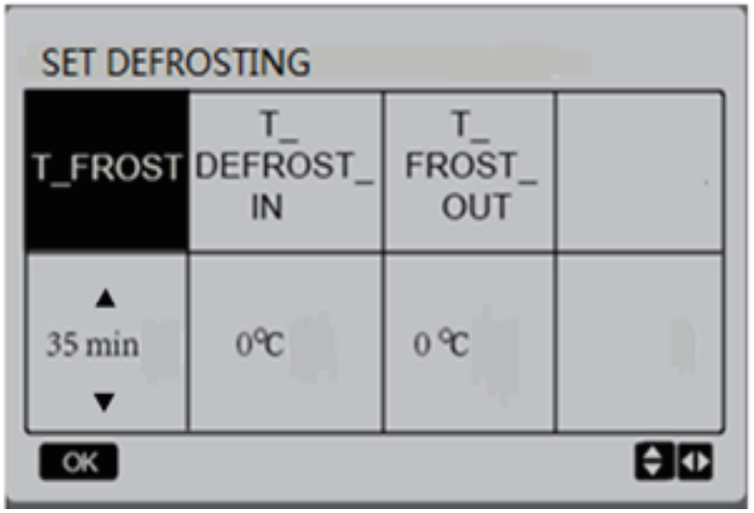
Select "SET UNIT PROTECTION",and press the "OK" button to enter the interface, The interface display is as follows:



Press the "▲" and "▼" buttons to set the values and press "OK" button to save the setting and return to the previous interface,or press the "BACK" button to cancel the setting and return to the previous interface. If there is no operation in 60 seconds, the wired remote controller will return to the home page.

◆ Set defrosting:

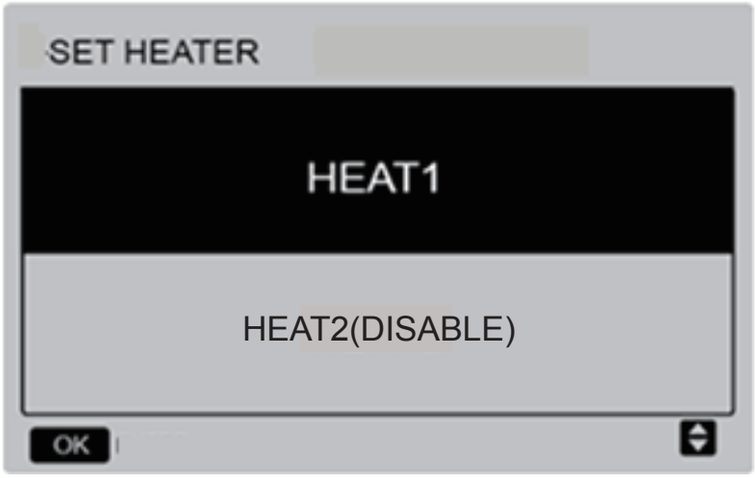
Select "SET DEFROSTING", and press the "OK" button to enter the interface, The interface display is as follows:




Press the "◄" and "►" buttons to select the desired option, and press "▲" and "▼" buttons to set the temperature and press the "OK" button to save the setting and return to the previous interface,or press the "BACK" button to cancel the setting and return to the previous interface. If there is no operation in 60 seconds, the wired remote controller will return to the home page.

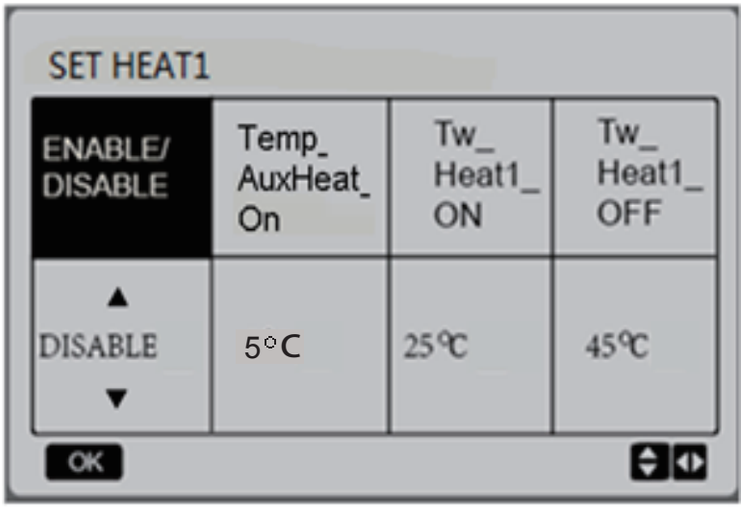
◆ Set heater:

Select "SET HEATER", and press the "OK" button to enter the interface, If it is controlled by single water pump.The interface display is as follows:




Press the "▲" and "▼" buttons to select the desired option, and press "OK" button to access the interface.

When select the "HEAT1", and press the "OK" button to access the interface, The interface display is as follows:

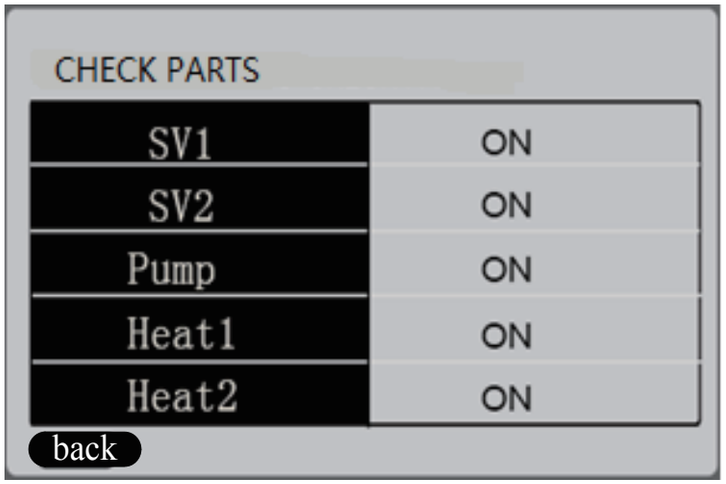



Tips: The value of "Tw_Heat1_OFF" is bigger than "Tw_Heat1_ON".

HEAT2 function is disabled, so user can not enter the HEAT2 interface.

◆ Check parts

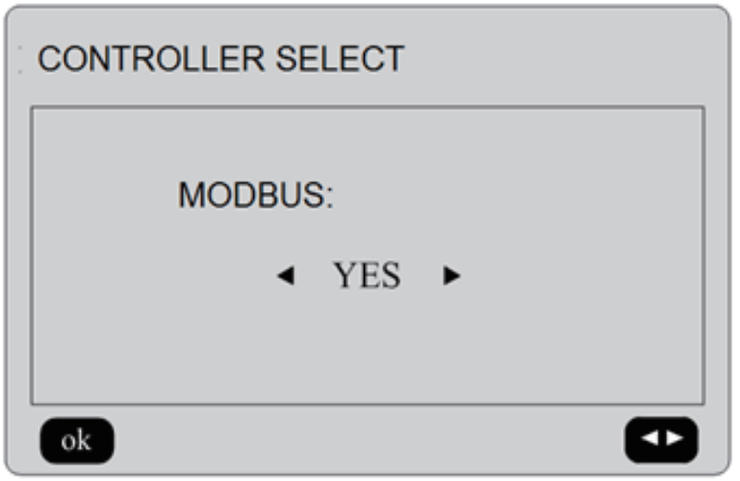
Select "CHECK PARTS", and press the "OK" button to enter the interface. The interface display is as follows:




The screen displays conditions of all parts; users can press "BACK" button to exit after confirming.

◆ Controller select

Select "CONTROLLER SELECT", and press the "OK" button to enter the interface. The interface display is as follows:



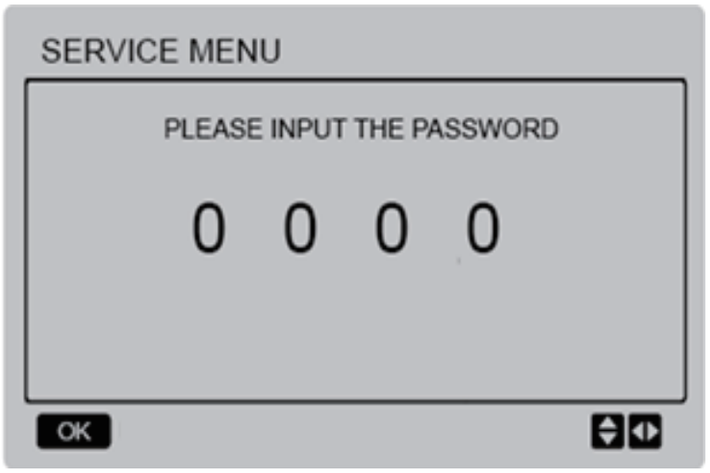

Operation instructions:

When select modbus "YES", and press "OK" button to access the function.User can use a host computer to communicate with the wired controller by modbus protocol,and these operations on the wired controller as "Power-ON/OFF", "Setting Mode", "Timer" and "Setting temperature" are invalid.

## 3.6 Setting SERVICE MENU

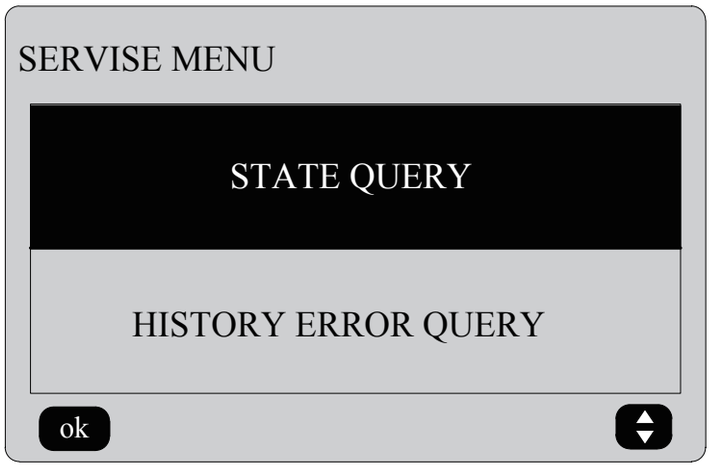
◆ Entering the password:

Select "SERVICE MENU", and press the "OK" button to enter the interface. The screen prompts the user to enter the password, as shown below:




The initial password is 9999 and cannot be changed. Press the "▲" and "▼" buttons to change the number to enter, and press the "◄" and "►" buttons to change the bit code to enter. After the number is entered, the display is not changed. After entering the password, press the "OK" button to enter the interface; press the "BACK" button to go back to the previous interface; the display is as follows if the input is incorrect:

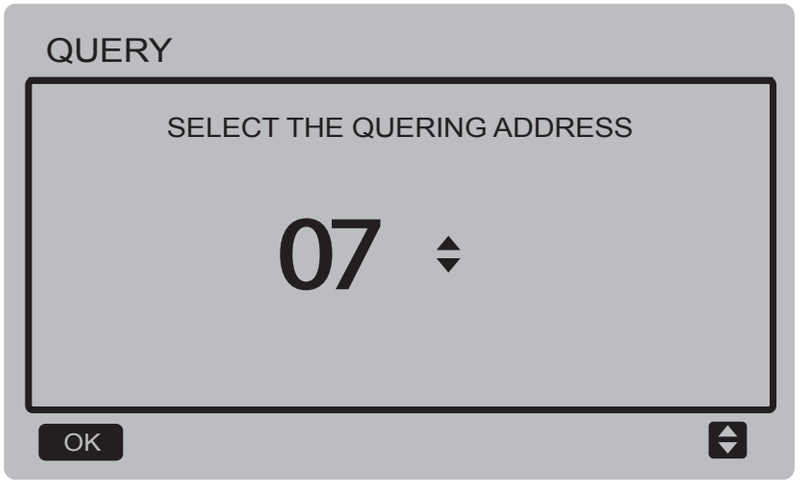

The query interface as follows is displayed if the input is correct:




Press the "▼" and "▲" buttons to select the desired option, and press the "OK" button to access the interface.Press the "BACK" button to cancel the setting and return to the previous interface.

◆ State query

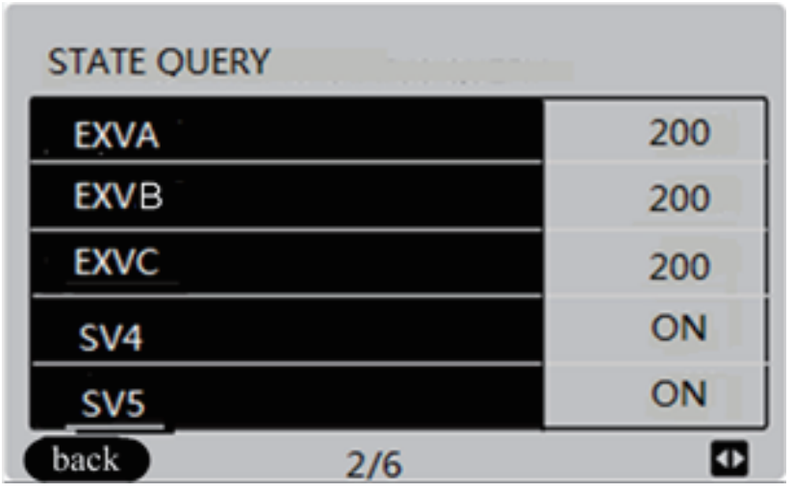
Select "STATE QUERY", and press the "OK" button to enter the interface. The interface display is as follows:

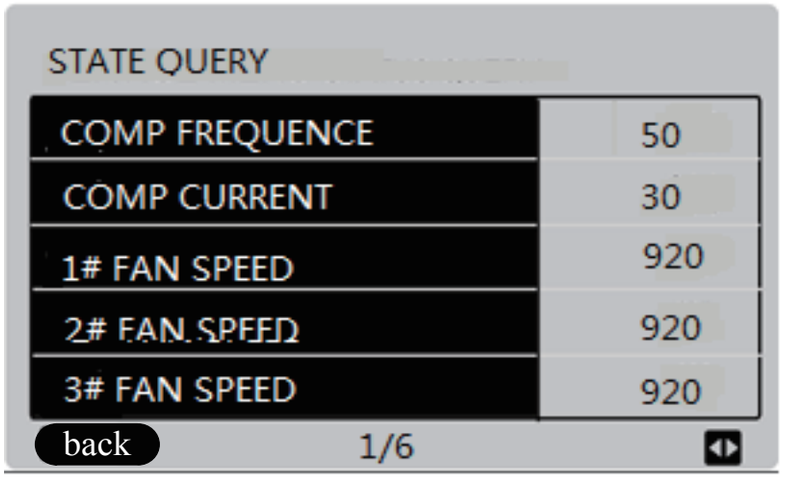


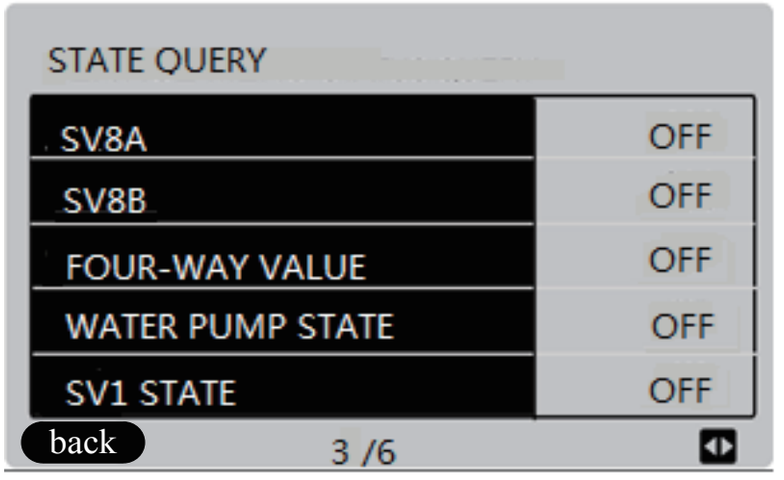
Press the "▼" and "▲" buttons to select the address of module to view (the offline address is skipped automatically). Press the "OK" button to access the lower-layer submenu, or press "BACK" to go back to the previous interface. During operation on the menu page, press "BACK" to go back to the previous interface. if there is no operation in 60 seconds, the wired remote controller will return to the home page.

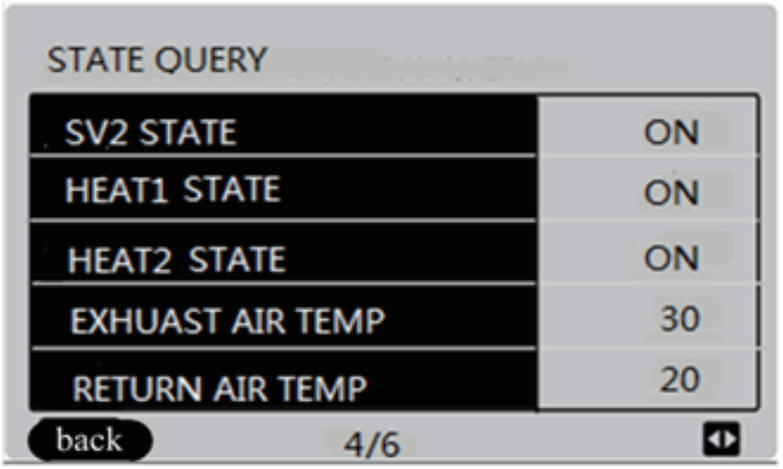
Take the mainboard (0#) as an example to make further explanation of the submenu.

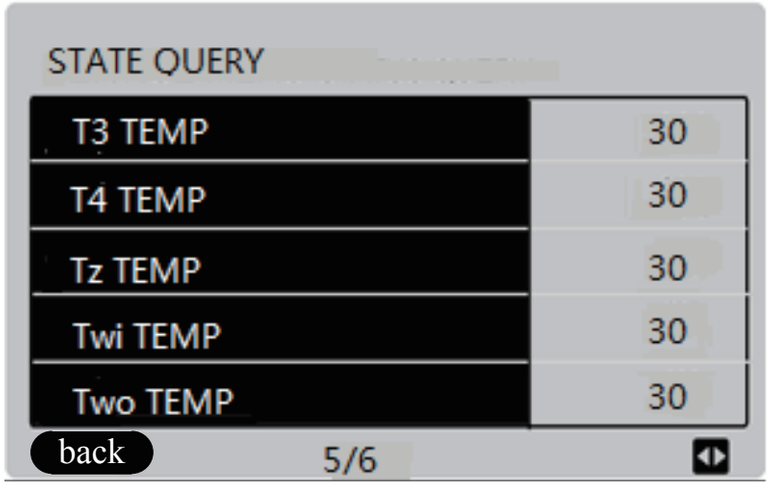
After the mainboard is selected, the running state of mainboard is as shown below:

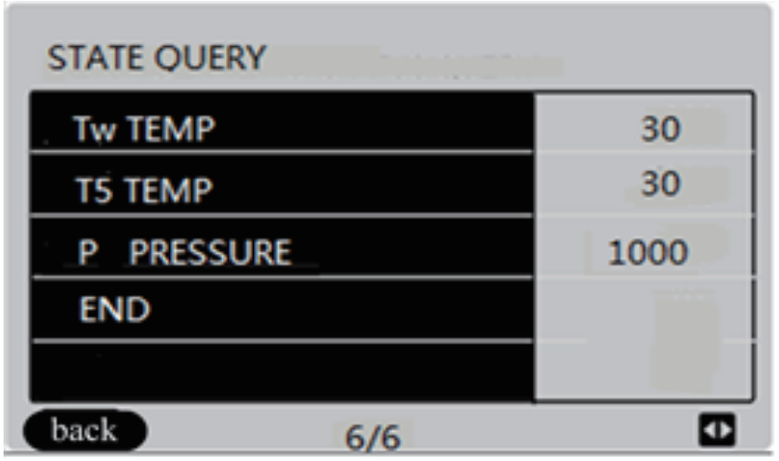




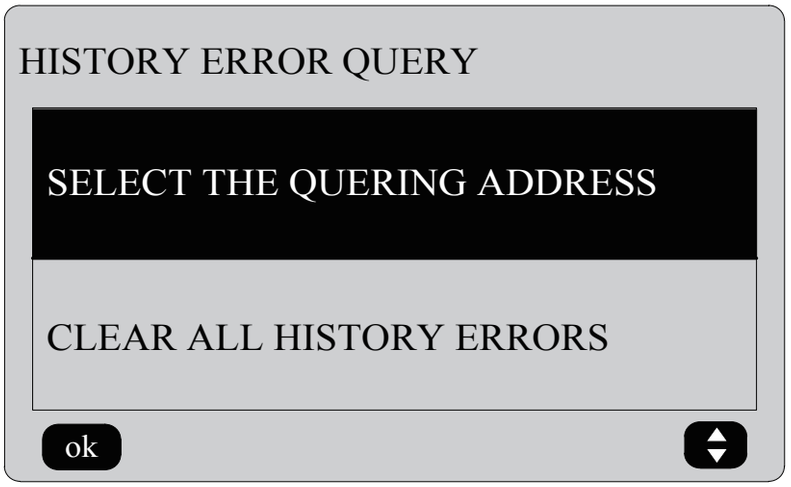




Press the "◄" and "►" buttons to select the different page.

◆ History error query

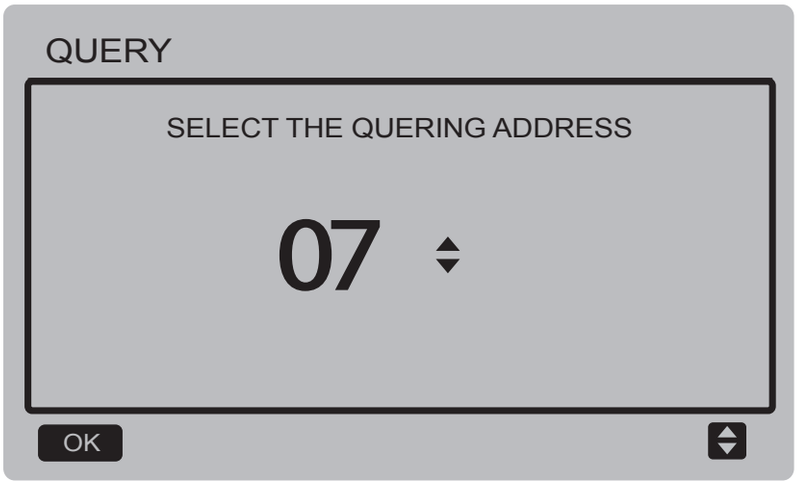
Press the "▼" and "▲" buttons to select "HISTORT ERROR QUERY" in the "SERVIE MENU" interface, and press the "OK" button to enter the interface. The interface display is as follows:



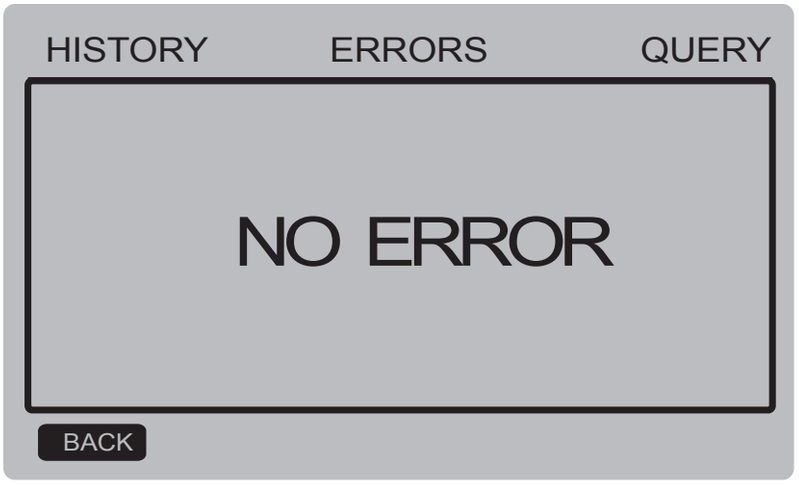

Press the "▼" and "▲" buttons to select the desired option, and press the "OK" button to access the interface.Press the "BACK" button to cancel the setting and return to the previous interface.

◆ Select the quering address

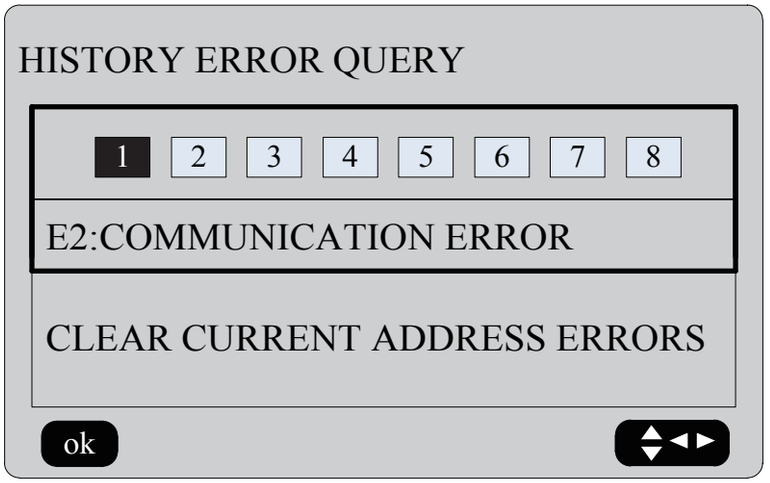
Select "SELECT THE QUERING ADDRESS", and press the "OK" button to enter the interface. The interface display is as follows:



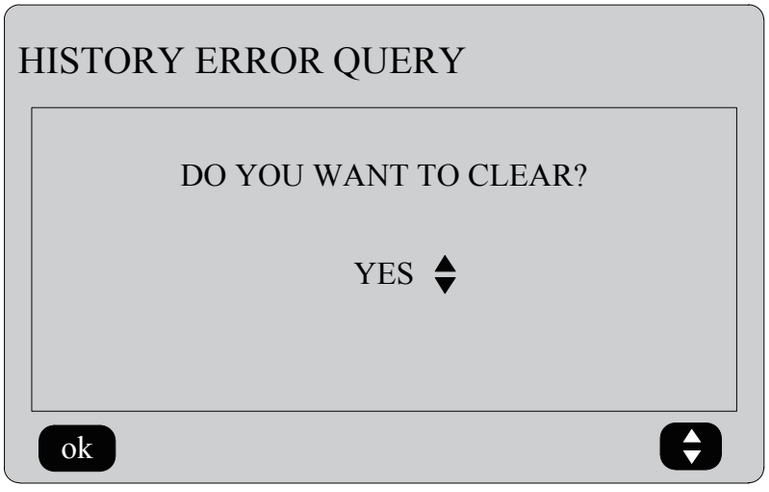

Press the "▼" and "▲" buttons to select the address of module to view (the offline address is skipped automatically). Press the "OK" button to access the lower-layer submenu, or press "BACK" to go back to the previous interface. During operation on the menu page, press "BACK" to go back to the previous interface. if there is no operation in 60 seconds, the wired remote controller will return to the home page.
If there is no error, press the "OK" button will enter the interface as follows:




The wired controller can display 8 errors at most. Take the mainboard (00#) as an example to make further explanation of the submenu.
After the mainboard is selected, the running state of mainboard is as shown below:



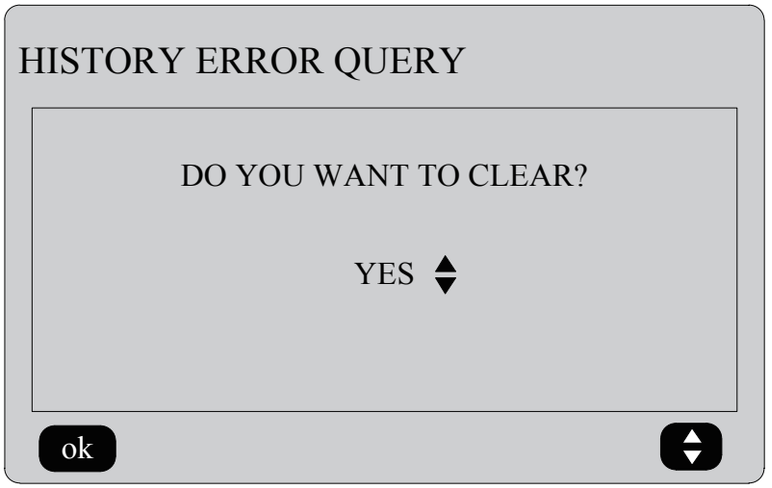

Press the "◄" and "►" buttons to view records of error history, press "OK" button back to "HISTORY ERROR QUERY" interface. Press "▼" and "▲" buttons to select "CLEAR CURRENT ADDRESS ERRORS" and press "OK" button to clear current address error, and enter the interface, the interface is as follows:



Press the "▼" and "▲" buttons to select the desired option, If "YES" is selected then press the "OK" button to clear current address error, and return to the "HISTORY ERROR QUERY" interface. If "NO" is selected then press "OK" button to return to the "HISTORY ERROR QUERY" interface directly.

◆ Clear all history errors

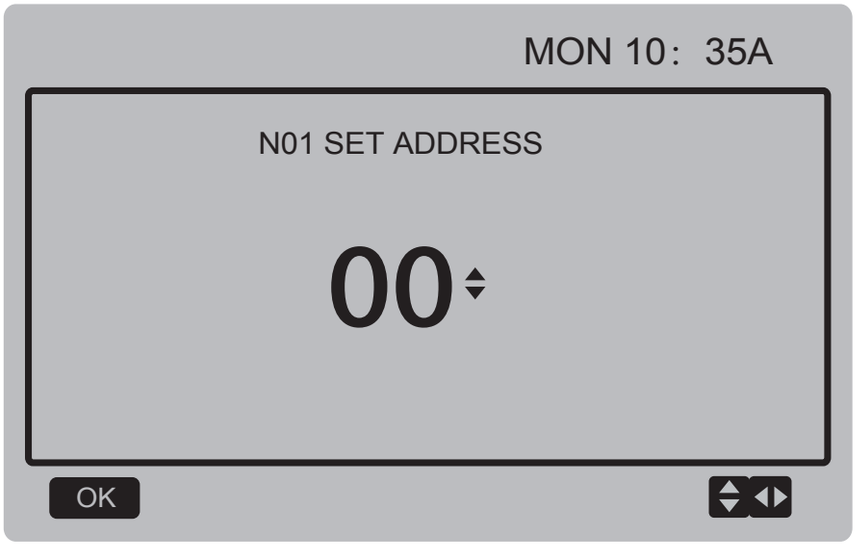
Press the "▼" and "▲" buttons to select "CLEAR ALL HISTORY ERRORS" in the "HISTORY ERROR QUERY" interface, and press the "OK" button to enter the interface. The interface display is as follows:




Press the "▼" and "▲" buttons to select the desired option, If "YES" is selected then press the "OK" button to clear all history errors, and return to the "HISTORY ERROR QUERY" interface. If "NO" is selected then press "OK" button to return to the "HISTORY ERROR QUERY" interface directly.

## 3.7 Setting Wired Controller Address

Press the "MENU" and "►" buttons for 3s at the same time to access wired controller address selection, and press the "▲" and "▼" buttons to select the desired values. If there is no subsequent operation in 60s, the setting is saved automatically, and the system returns to the home page.Press the "BACK" button to cancel the setting and return to the previous interface.




The set address range is 0 to 15.

## 3.8 Power Failure Memory Function

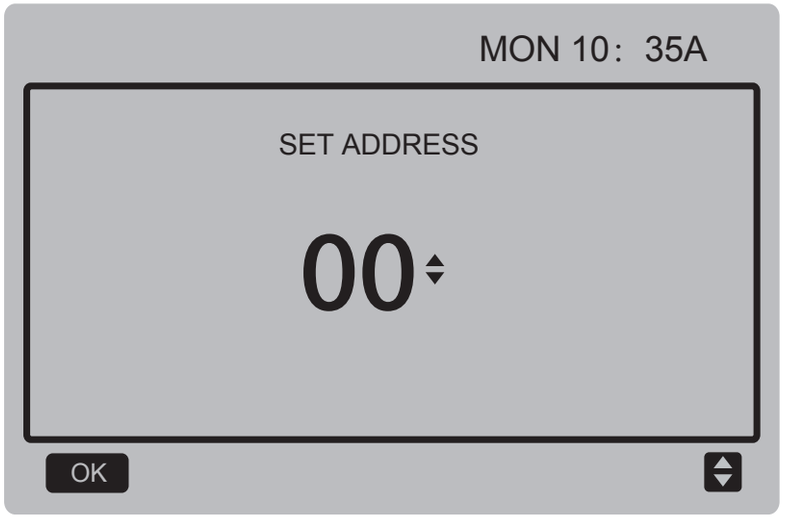
The power supply to the system fails unexpectedly during operation. When the system is powered on again, the wired controller continues to operate according to the status before the last power failure, including the power-on/off status, mode, set temperature, failure, protection, wired controller address, timer, hysteresis, etc. However, the memorized content must be the content set at least 7s before the power failure.

## 3.9 Parallel Function of Wired Controller

1) A maximum of 16 wired controllers can be connected in parallel, and the address can be set in the range of 0 to 15.
2) After wired controllers are connected in parallel, wired controllers with the same address are not allowed on the bus; otherwise a communication failure will occur.
3) After multiple wired controllers are connected in parallel, data is shared among them, e.g., the power-on/off function, data settings (such as the water temperature and hysteresis) and other parameters will be kept consistent (note: The mode, temperature, and hysteresis settings can be shared only when the system is powered on).
4) Start point of data sharing: After the power-on/off button is pressed, data can be shared during parameter adjustment. The "OK" button must be pressed after parameters are adjusted, and the finally adjusted values will be shared.
5) Since the bus is processed in the polling mode, the data of the wired controller with the minimum number is valid if multiple wired controllers are operated at the same time in the same bus cycle (4s). Avoid the above situation during operation.
6) After any of parallel wired controllers has been reset, the address of this wired controller is 0 by default.

## 3.10 Monitoring Setting of Wired Remote Controller

Press the "MENU" and "►" buttons for 3s at the same time to access "SET ADDRESS" interface, The interface display is as follows:

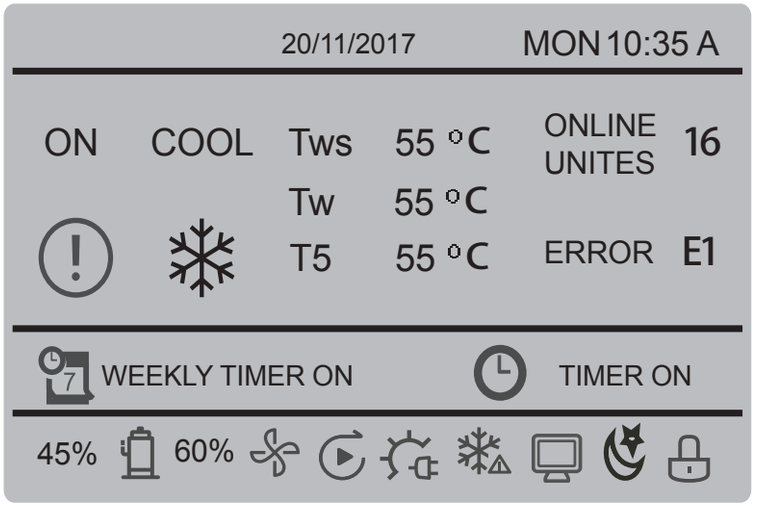



The set address range is 0 to 15.

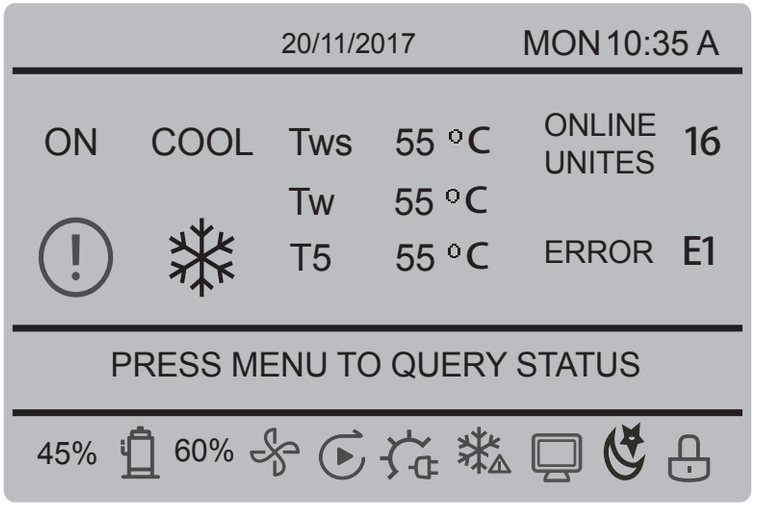
Press the "▲" and "▼" buttons to select the desired values. If there is no subsequent operation in 60s, or press "OK" button the setting is saved automatically, and the system returns to the home page. Press the "BACK" button to cancel the setting and return to the previous interface.

The units only have one main control wired remote controller (the default address 00), and other address (address 01-15) must be set as monitor wired remote controller.

When set address "00" and press "OK" button, the wired remote controller will enter the interface as follows:




When set address "01-15" and press "OK" button, the wired remote controller will enter the interface as follows:



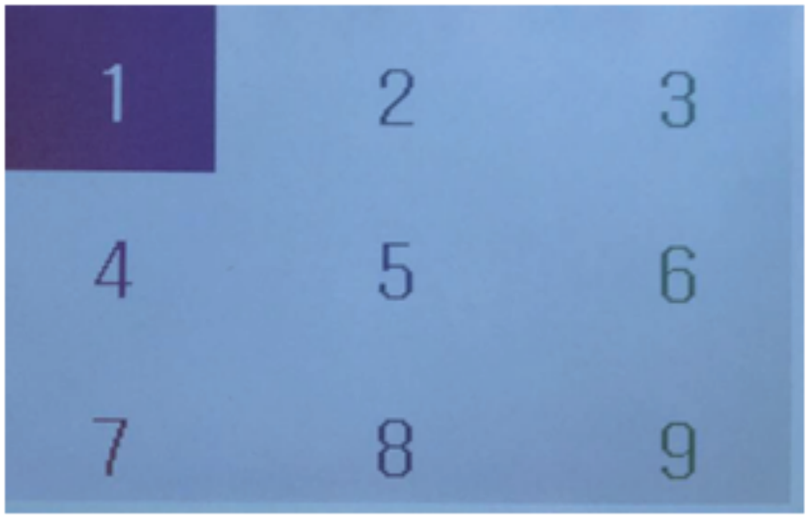

When the wired controller is unlocked, press "MENU" button to enter the "SERVICE MENU" function.

## 3.11 Upper Computer Communication Function

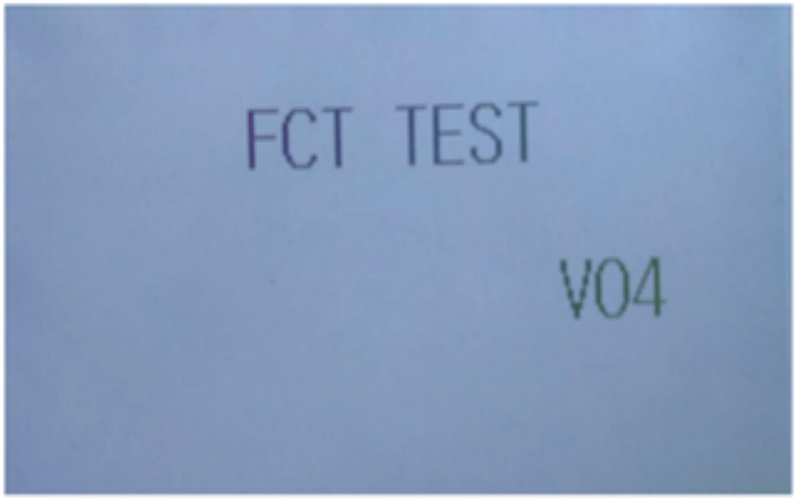
1) The home page displays the content below during communication with the upper computer: Communication between the wired controller and the upper computer.
2) If the outdoor main control board is in the remote ON/OFF control mode and the wired controller sends an alarm, the current alarm page displays: Remote ON/OFF Control Mode. In this case, the network control of upper computer is invalid, and the wired controller can query the system status only and cannot send out control information.

## 3.11 FCT Function

Press and hold on the "MENU" "BACK" and "UNLOCK" buttons to enter the interface before the power is on. The interface display is as follows:




Press "MENU" ⟶ "▲" ⟶ "ON/OFF" ⟶ "◀" ⟶ "OK" ⟶ "▶" ⟶ "BACK" ⟶ "▼" ⟶ "UNLOCK" buttons one by one to light 1-9 to enter the FCT interface. The interface display is as follows:




After entering the page displays the version number, All parameters are reset to the default parameters, and eliminate time setting and the fault records. The equipment back to the factory at the same time.
To exit the FCT function should power on again.

# 4 INSTALLATION MANUAL

## 4.1 Safety precaution

- Read the safety precautions carefully before installing the unit.
- Stated below are important safety issues that must be obeyed.
- Conform there is no abnormal phenomena during test operation after complete, then hand the manual to the user.
- Meaning of marks:

| | |
|---|---|
| **WARNING** | Means improper handling may lead to personal death or severe injury. |
| **CAUTION** | Means improper handling may lead to personal injury or property loss. |

### WARNING

**Please entrust the distributor or professionals to install the unit.**
Installation by other persons may lead to imperfect installation, electric shock or fire.

**Strictly follow this manual.**
Improper installation may lead to electric shock or fire.

**Reinstallation must be performed by professionals.**
Improper installation may lead to electric shock or fire.

**Do not disassemble your air conditioner at will.**

## CAUTION

**Do not install the unit in a place vulnerable to leakage of flammable gases.**
Once flammable gases are leaked and left around the wire controller, fire may occur.

**The wiring should adapt to the wire controller current.**
Otherwise, electric leakage or heating may occur and result in fire.

**The specified cables shall be applied in the wiring. No external force may be applied to the terminal.**
Otherwise, wire cut and heating may occur and result in fire.

**Do not place the wired remote controller near the lamps, to avoid the remote signal of the controller to be disturbed. (refer to the right figure)**

# 4.2 Other Precautions

## 4.2.1. Installation location

Do not install the unit in a place with much oil, steam, sulfide gas.
Otherwise, the product may deform and fail.

## 4.2.2 Preparation before installation

1) Check whether the following assemblies are complete.

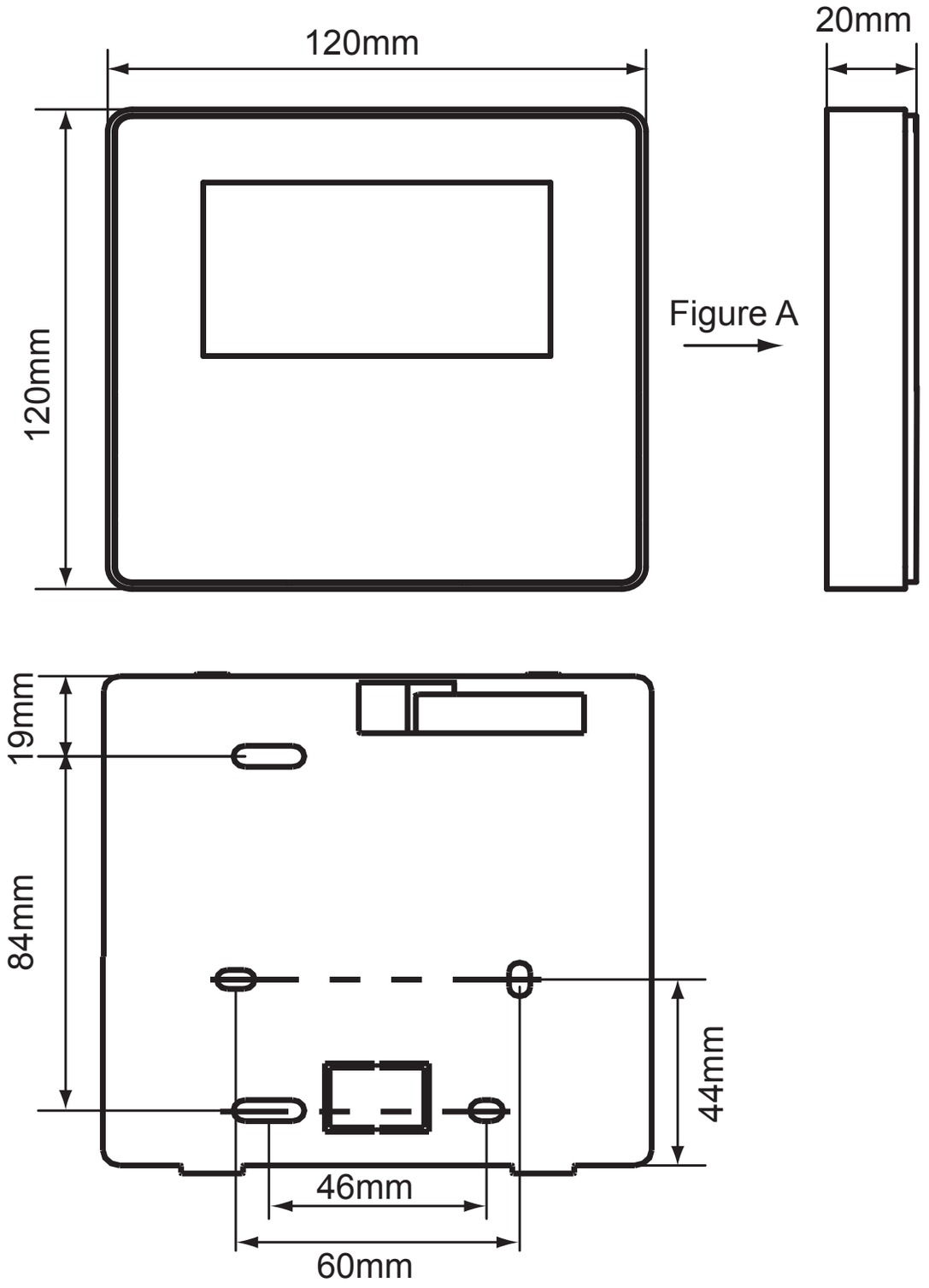
| No. | Name | Qty. | Remarks |
|---|---|---|---|
| 1 | Wire controller | 1 | _____ |
| 2 | Cross round head wood mounting screw | 3 | GB950-86 M4X20 (For Mounting on the Wall) |
| 3 | Cross round head mounting screw | 2 | M4X25 GB823-88 (For Mounting on the Electrical Switch Box) |
| 4 | Installation & Owner's Manual | 1 | _____ |
| 5 | Plastic bolt | 2 | This accessory is used when install the centralized control inside the electric cabinet |
| 6 | Plastic expansion pipe | 3 | For Mounting on the Wall |

### 4.2.3 Note to installation of wire controller:

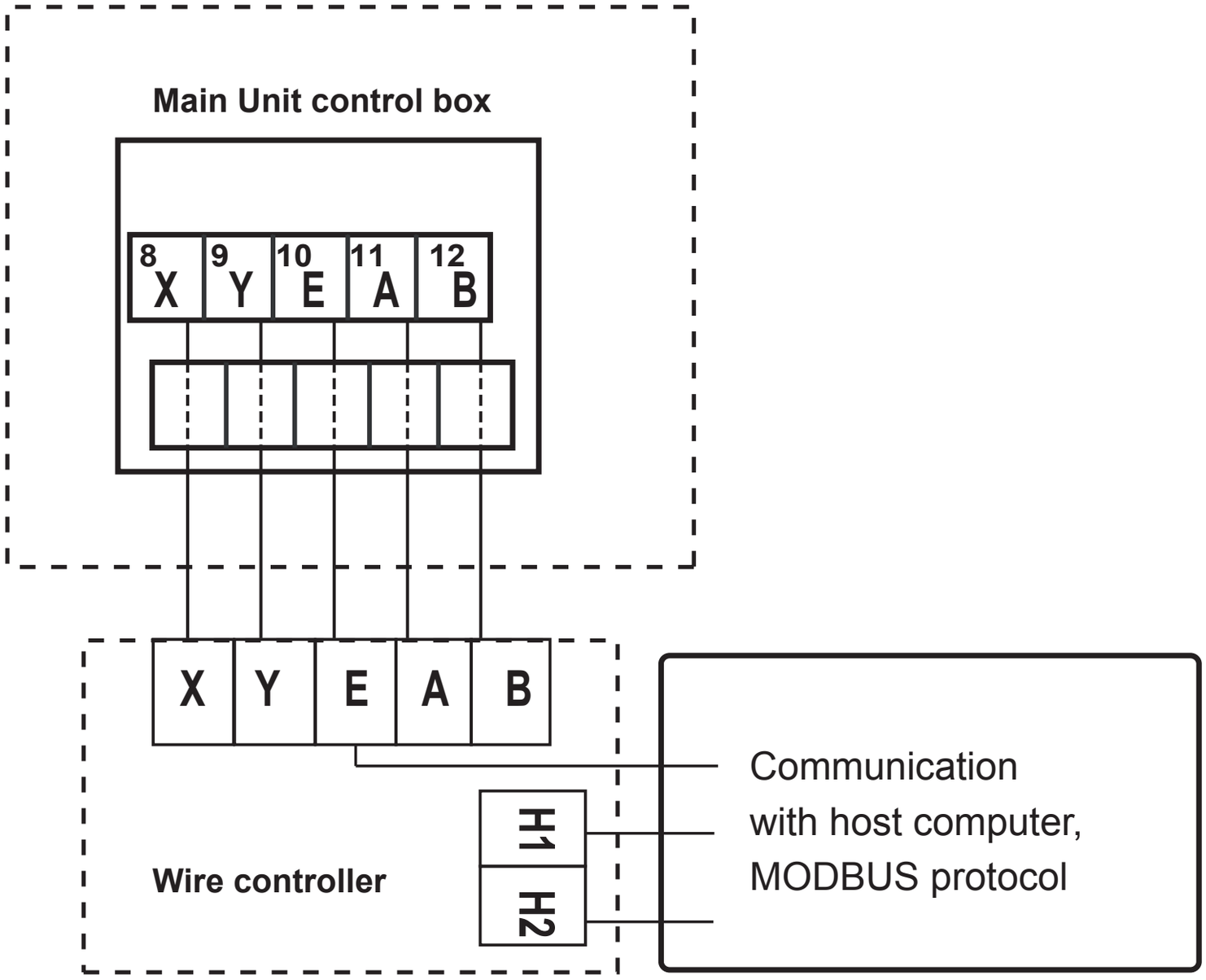
1) This installation manual contains information about the procedure of installing Wired Remote Controller. Please refer to Indoor Unit Installation Manual for connecting between Wired Remote Controller and Indoor Unit.
2) Circuit of Wired Remote Controller is low voltage circuit. Never connect it with a standard 220V/380V circuit or put it into a same Wiring Tube with the circuit.
3) The shield cable must be connected stable to the ground, or transmission may fail.
4) Do not attempt to extend the shield cable by cutting, if it is necessary, use Terminal Connection Block to connect.
5) After finishing connection, do not use Megger to have the insulation check to the signal wire.

## 4.3 Installation procedure and matching setting of wire controller

## 4.3.1 Structure size figure

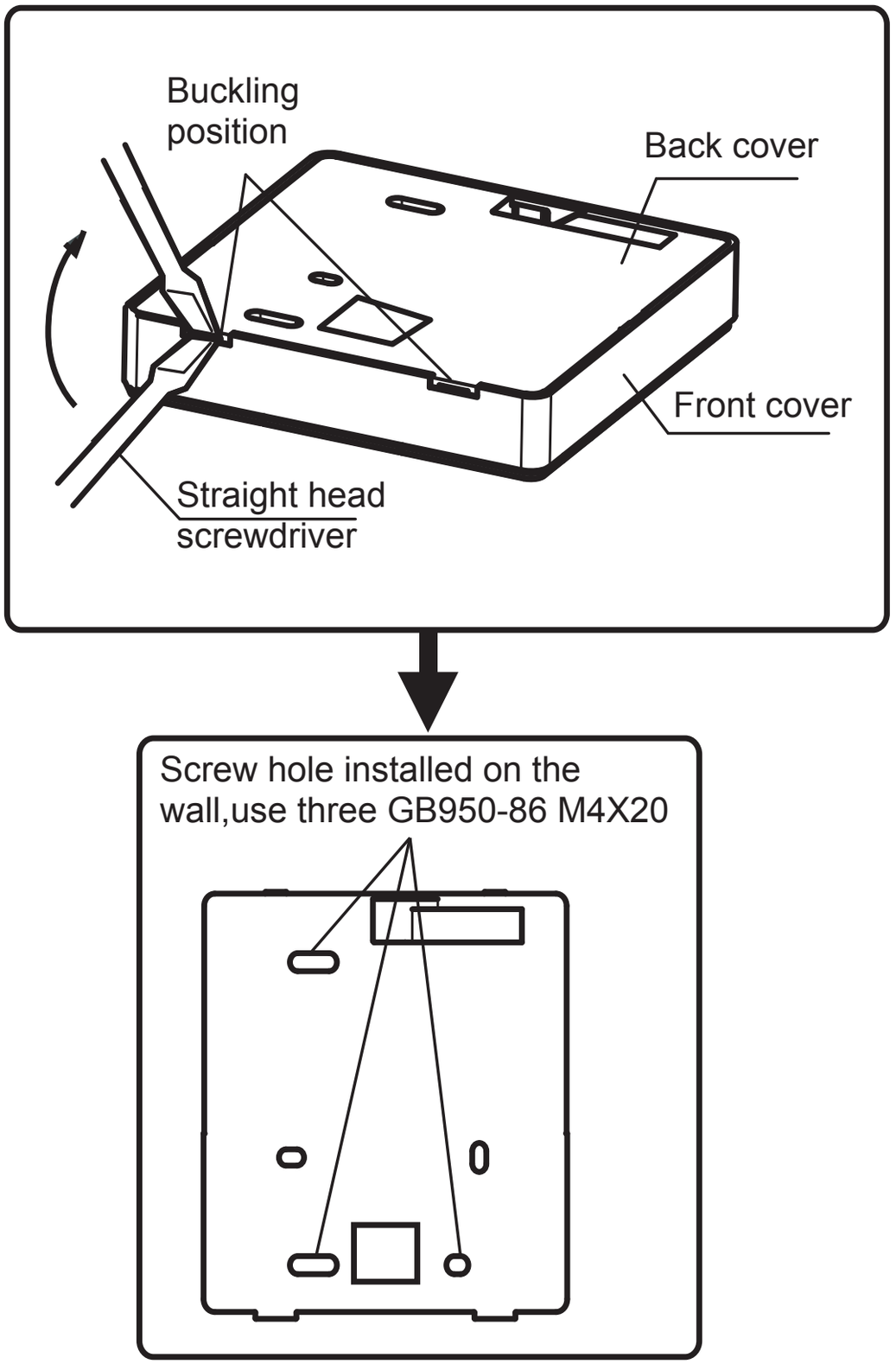


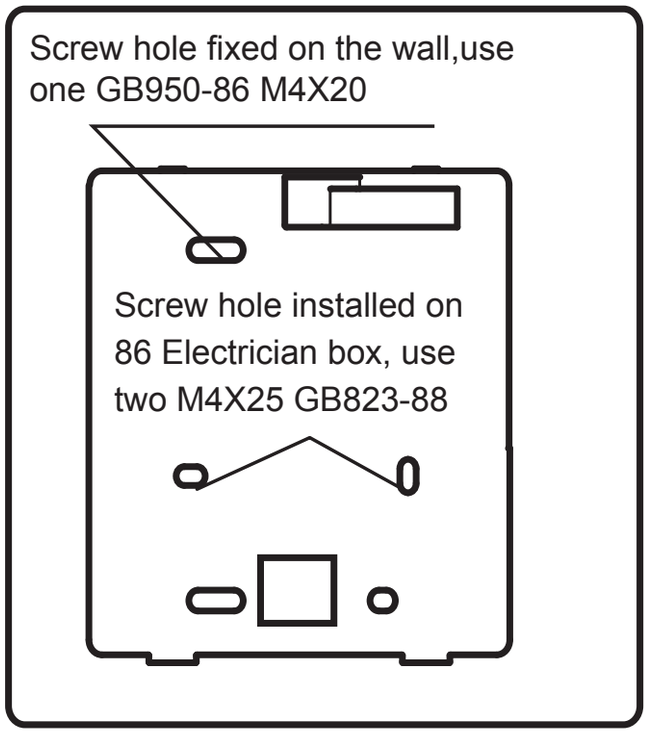
## 4.3.2 Wiring

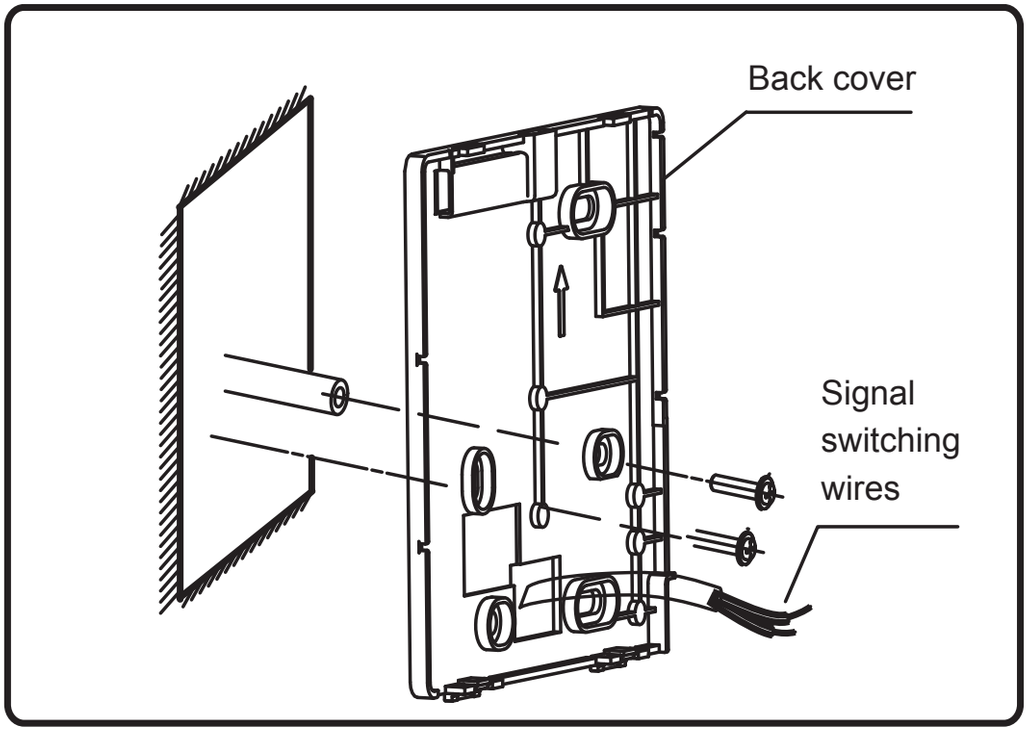



| Input Voltage (A/B) | 10VAC |
|---|---|
| Wiring size | 0.75mm$^2$ |

## 4.3.3 Back cover installation




Screw hole fixed on the wall,use one GB950-86 M4X20
Screw hole installed on 86 Electrician box, use two M4X25 GB823-88


Back cover
Signal switching wires

1) Use straight head screwdriver to insert into the buckling position in the bottom of wire controller, and spin the screwdriver to take down the back cover. (Pay attention to spinning direction, otherwise will damage the back cover!)

2) Use three GB950-86 M4X20 screws to directly install the back cover on the wall.

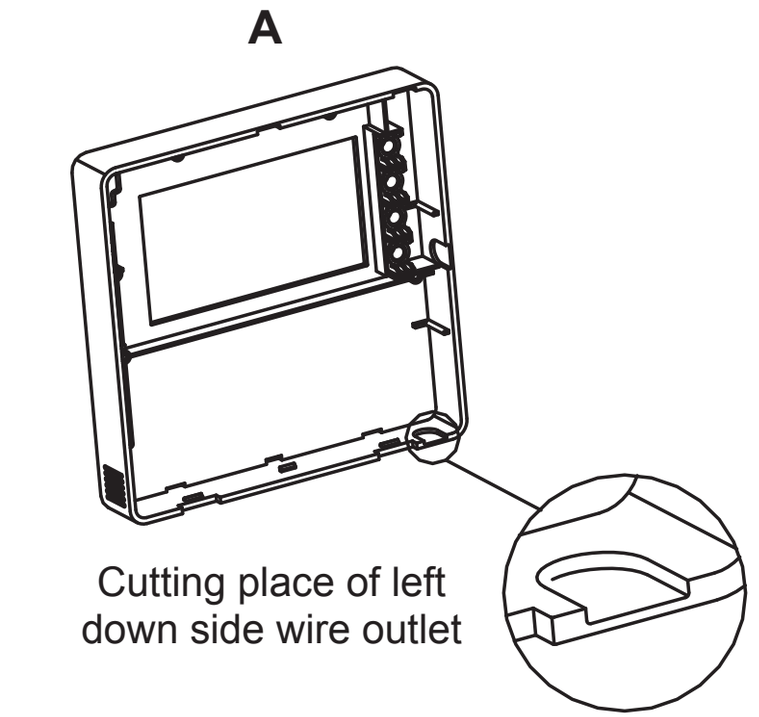
3) Use two M4X25 GB823-88screws to install the back cover on the 86 electrician box, and use one GB950-86 M4X20 screws for fixing on the wall.

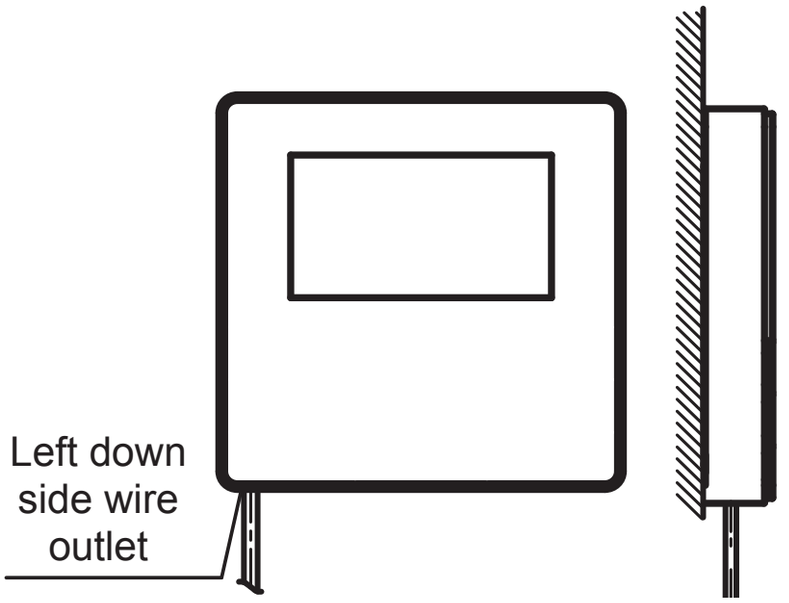
4) Adjust the length of two plastic screw bars in the accessory to be standard length from the electrical box screw bar to the wall. Make sure when install the screw bar to the wall, make it as flat as the wall.

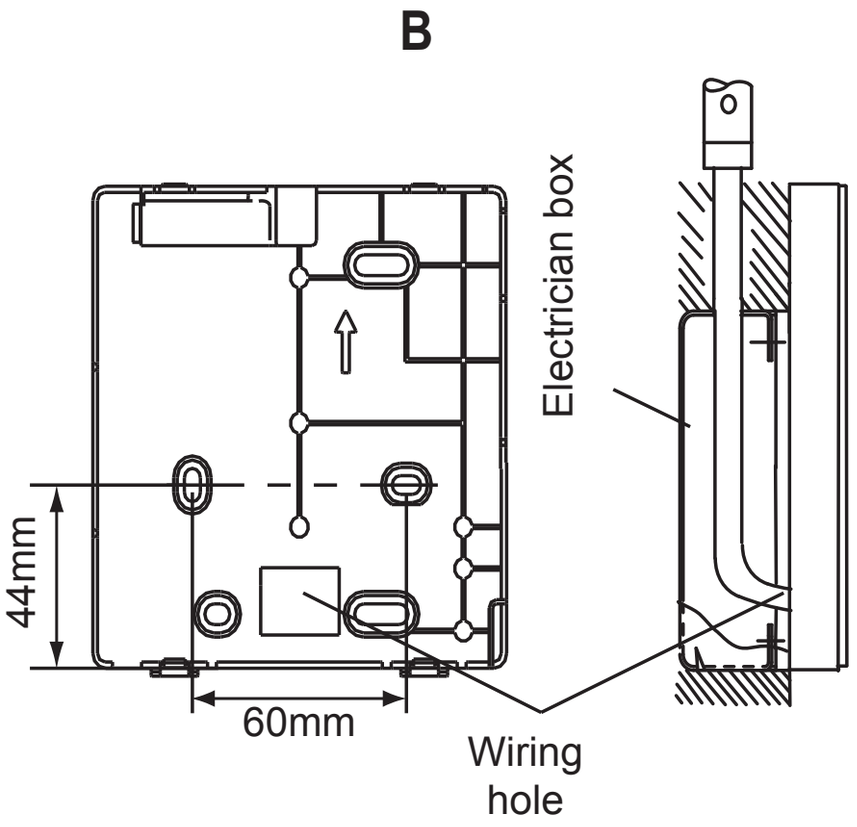
5) Use cross head screws to fix the wire controller bottom cover in the wall through the screw bar. Make sure the wire controller bottom cover is on the same level after installation, and then install the wire controller back to the bottom cover.

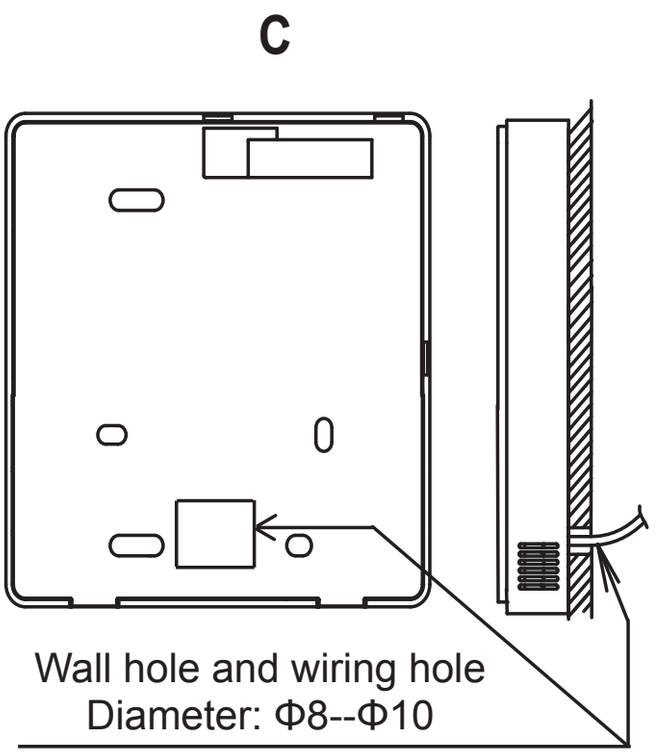
6) Over fasten the screw will lead to deformation of back cover.

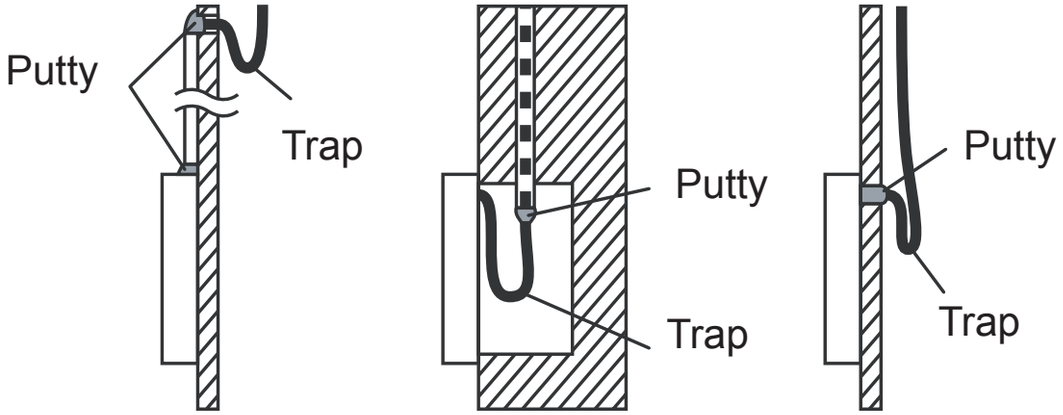
## 4.3.4 Wire outlet





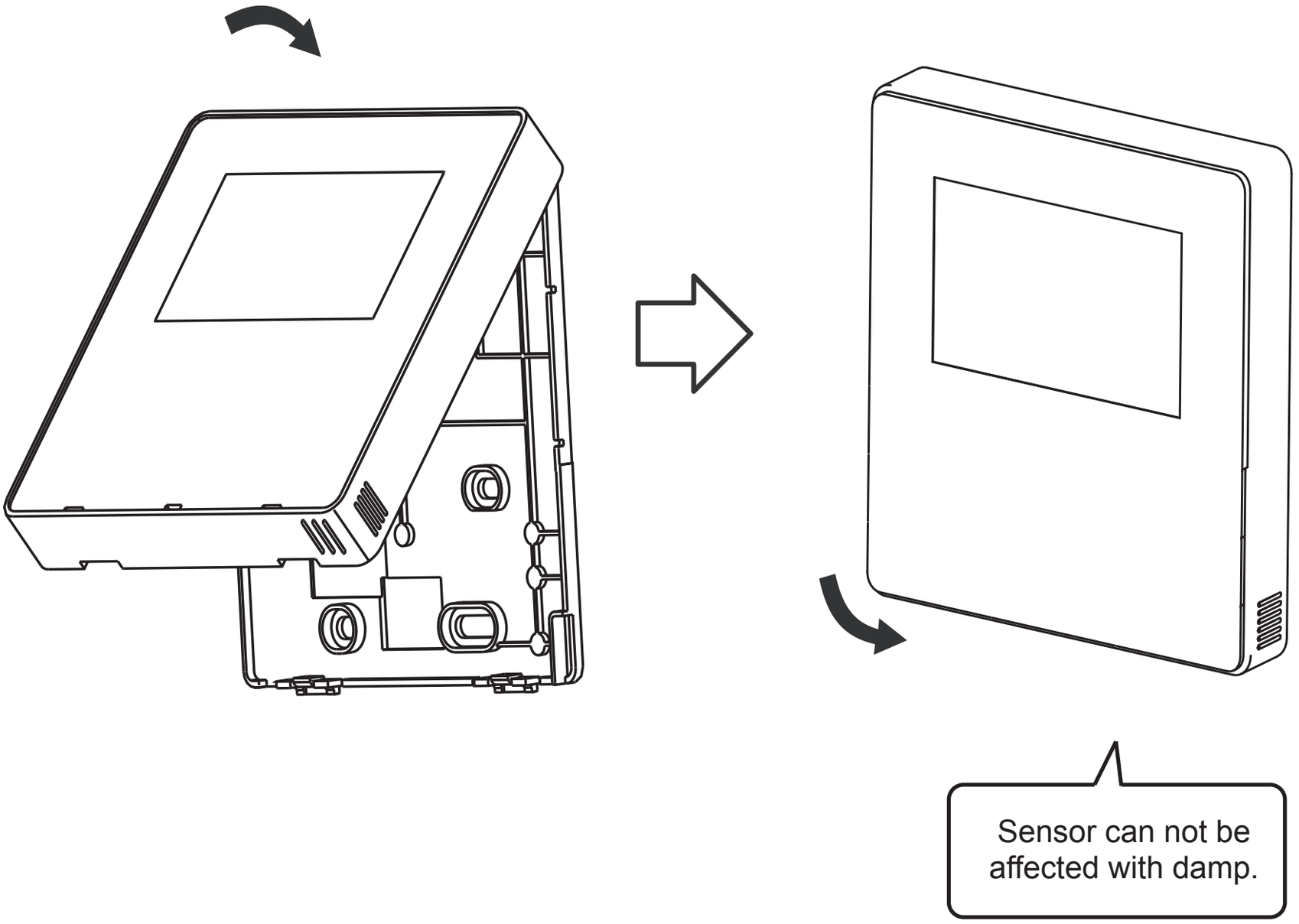



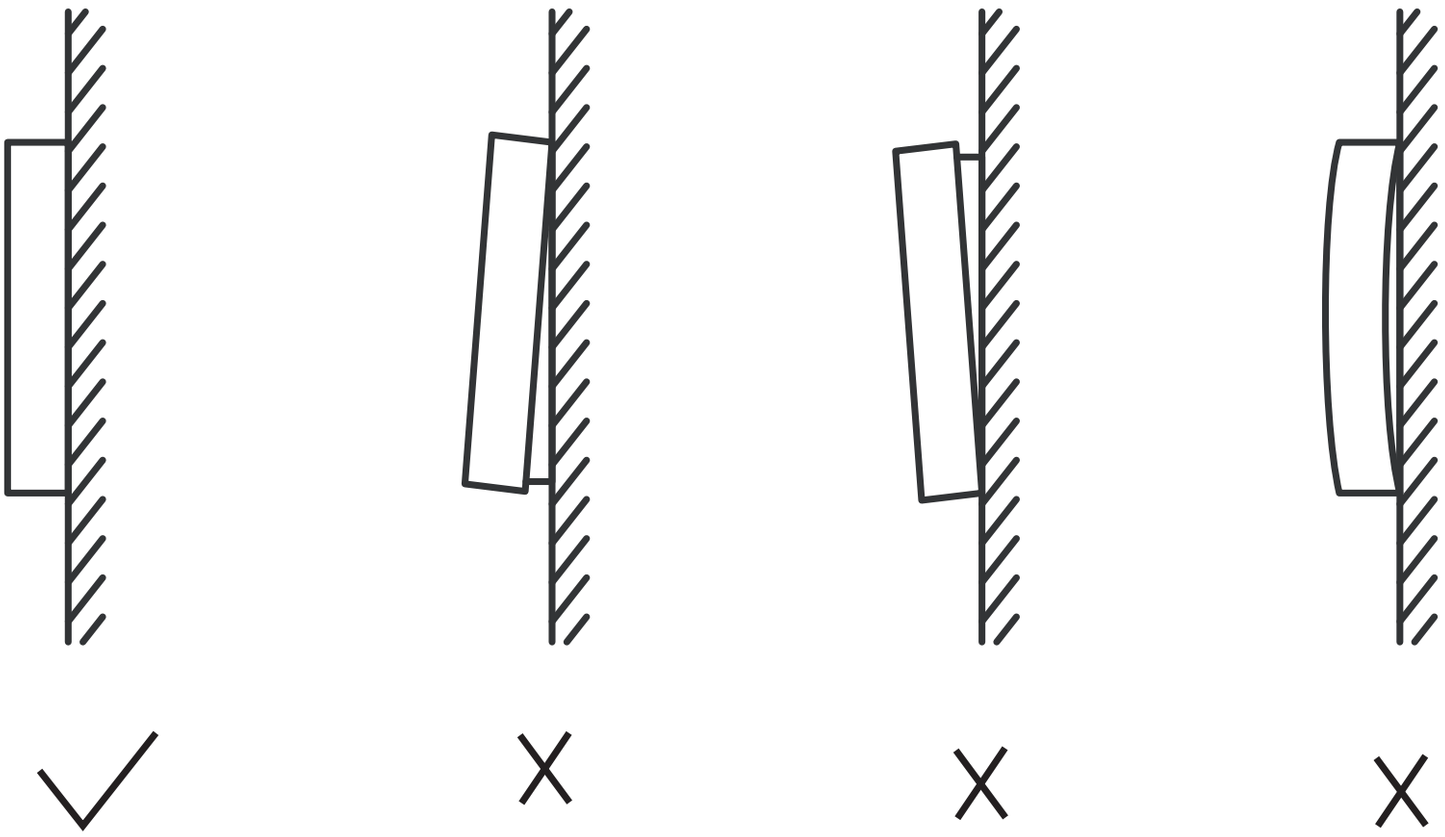

Avoid the water enter into the wired remote controller, use trap and putty to seal the connectors of wires during wiring installation.

## 4.4 Front cover installation

After adjusting the front cover and then buckle the front cover; avoid clamping the communication switching wire during installation.



Correct install the back cover and firmly buckle the front cover and back cover, otherwise will make the front cover drop off.



# 5 Failure Information and Code

| No | Error code | Content |
|---|---|---|
| 1 | E0 | EEPROM error of main control board |
| 2 | E1 | Power phase sequence error |
| 3 | E2 | Communication error between main control board and wired controller |
| 4 | E3 | Total water outlet temperature sensor error (master only) |
| 5 | E4 | Outlet water temp sensor error |
| 6 | 1E5 | 1E5 condenser tube temperature sensor T3A error |
| | 2E5 | 2E5 condenser tube temperature sensor T3B error |
| 7 | E6 | Water tank temperature sensor T5 error |
| 8 | E7 | Ambient temperature sensor error |
| 9 | E8 | Power supply phase sequence protector output error |
| 10 | E9 | Water flow detection error (recovered through button) |
| 11 | EA | Reserved |
| 12 | 1Eb | Taf1 cooling evaporator low-temperature antifreeze protection sensor error |
| | 2Eb | Taf2 cooling evaporator low-temperature antifreeze protection sensor error |
| 13 | EC | Slave unit module reduction |
| 14 | 1Ed | A system discharge temperature sensor error |
| | 2Ed | B system discharge temperature sensor error |
| 15 | 1EE | EVI plate heat exchanger refrigerant temperature T6A sensor error |
| | 2EE | EVI plate heat exchanger refrigerant temperature T6B sensor error |
| 16 | EF | Unit water return temperature sensor error |
| 17 | EH | System self-check error alarm |
| 18 | EL | Reserved |
| 19 | EP | Discharge sensor error alarm |

| No | Error code | Content |
|---|---|---|
| 20 | EU | Tz sensor error |
| 21 | P0 | System high-pressure protection or discharge temperature protection |
| 22 | P1 | System low pressure protection |
| 23 | P2 | Tz total cold outlet temperature too high |
| 24 | P3 | Reserved |
| 25 | P4 | System A current protection |
| 26 | P5 | System B current protection |
| 27 | P6 | Module error |
| 28 | P7 | High temperature protection of system condenser |
| 29 | P8 | Reserved |
| 30 | P9 | Water inlet and outlet temperature difference protection |
| 31 | PA | Reserved |
| 32 | Pb | Winter antifreeze protection |
| 33 | PC | Cooling evaporator pressure too low |
| 34 | PE | Cooling evaporator low temperature antifreeze protection |
| 35 | PF | Electronic lock not unlocked (main board); electronic lock error or not unlocked (wired controller) |
| 36 | PH | Heating T4 too high temperature protection |
| 37 | PL | Tfin module too high temperature protection |
| 38 | 1PP | IPM module error, system A protection |
| | 2PP | IPM module error, system B protection |
| 39 | 1PU | DC fan A module protection |
| | 2PU | DC fan B module protection |
| | 3PU | DC fan C module protection |
| 40 | 1H9 | Compressor A drive model not matched |
| | 2H9 | Compressor B drive model not matched |

| No | Error code | Content |
|---|---|---|
| 41 | H5 | Voltage too high or low |
| 42 | 1HE | No inset A valve error |
| | 2HE | No inset B valve error |
| | 3HE | No inset C valve error |
| 43 | 1F0 | IPM module transmission error |
| | 2F0 | IPM module transmission error |
| 44 | F2 | Superheat insufficient |
| 45 | 1F3 | Fan A transmission error(reserved) |
| | 2F3 | Fan B transmission error(reserved) |
| | 3F3 | Fan C transmission error(reserved) |
| 46 | 1F4 | PP protection occurs for 3 times in 60 minutes (power failure recovery) |
| | 2F4 | PP protection occurs for 3 times in 60 minutes (power failure recovery) |
| 47 | 1F6 | A system buss voltage error (PTC) |
| | 2F6 | B system buss voltage error (PTC) |
| 48 | F7 | Reserved |
| 49 | 1F9 | Tfin1 radiator temperature sensor error |
| | 2F9 | Tfin2 radiator temperature sensor error |
| 50 | 1FA | Reserved |
| | 2FA | Reserved |
| 51 | Fb | Pressure sensor error |
| 52 | Fd | Air return temperature sensor error |
| 53 | FE | Heat recovery temperature sensor error |
| 54 | 1FF | DC fan A error |
| 55 | 2FF | DC fan B error |
| 56 | 3FF | DC fan C error |

| No | Error code | Content |
|---|---|---|
| 57 | FP | DIP switch inconsistency of multiple water pumps |
| 58 | C7 | 3 times PL |
| 59 | L0 | module protection |
| 60 | L1 | low-voltage protection |
| 61 | L2 | high-voltage protection |
| 62 | L4 | MCE error |
| 63 | L5 | zero-speed protection |
| 64 | L7 | phase loss |
| 65 | L8 | frequency change over 15Hz |
| 66 | L9 | frequency phase difference 15Hz |
| 67 | d0 | Gate controlled switch protection (d0 and address display cyclically by 10 seconds) |
| 68 | dF | Defrosting prompt |

# ATTACHED TABLE ABOUT MODBUS

## 6.1 Communication specification

Interface: RS-485, H1 on the back of the controller, H2 connected to the serial port of T/R- and T/R+, H1, H2 as the RS485 differential signal.

The Upper computer is the host, and the slave machine is the line controller the communication parameters are as follows:

- baud rate: 9600bps.
- Data length: 8 Data bits.
- check: None Parity.
- Stop bit: 1 stop bit.
- communication protocol: Modbus RTU.

Mailing address: after the online controller home page is unlocked, it is checked by MENU+ right key, 0-15 represents address 1-16 and 16 addresses respectively

## 6.2 Supported function codes and exception codes

| Function code | Explain |
|---|---|
| 03 | Read Holding Registers |
| 06 | Write Single Register |
| 16 | Read/Write multiple registers |

# Exception code specification

| Exception code | MODBUS name | Remarks |
|---|---|---|
| 01 | illegal function code | Function code not supported by line controller |
| 02 | illegal data address | The address sent in query or setting is undefined in the line controller |
| 03 | illegal data values | The set parameter is an illegal value, which exceeds the reasonable set range |

## 6.3 Address mapping in register of wired controller

| Addresses below can be used as 03 (Read), 06 (Write in a single register), 16 (Write in several registers) | | |
|---|---|---|
| Data | Address of Register | Notes |
| Modset | 0 | 1: Cooling mode<br>2: Heating mode<br>8: OFF |
| Outlet water temp.set (Tws) | 1 | Cooling mode (0°C~20°C)<br>Heating mode (25°C~55°C) |
| Second target temp. set | 2 | Setpoint cool_2 (0°C~20°C)<br>Setpoint heat_2 (25°C~55°C) |
| Silent mode | 100 | 1: Standard Mode<br>2: Silent Mode<br>7: Supper Silent Mode |

Note: 06, 16 Write register, If the value is written beyond the scope of the note, the exception code is returned

| The following address can use 03 (read) | | |
|---|---|---|
| Data | Address of Register | Notes |
| Compressor switch status | 0 | ON:1 OFF:0 |
| Fan switch status | 1 | ON:1 OFF:0 |
| Water pump switch state | 2 | ON:1 OFF:0 |
| Status of auxiliary heat 1 switch | 3 | ON:1 OFF:0 |
| Status of auxiliary heat 2 switch | 4 | ON:1 OFF:0 |
| Defrost state | 8 | ON:1 OFF:0 |
| Anti-freezing heater | 9 | ON:1 OFF:0 |
| Remote control state | 10 | ON:1 OFF:0 |
| Running Mode | N*100+240 | 1: OFF<br>2: Cooling Mode<br>3: Heating Mode |
| Current silent Mode | N*100+241 | 1: Standard Mode<br>2: Silent Mode<br>3: Super Silent Mode |

| The following address can use 03 (read) | | |
|---|---|---|
| Data | Address of Register | Notes |
| In water temp | N*100+244 | Units: °C |
| Out water temp | N*100+245 | Units: °C |
| Total outlet water temp. | N*100+246 | Units: °C, only host 0 machine can read this parameter. |
| Ambient temp | N*100+247 | Units: °C |
| Error or protect | N*100+272 | See "Failure Information and Code" |
| Last error or protect | N*100+273 | See "Failure Information and Code" |

Note: (N stands for external machine address 0-15, 0 stands for host 0)

MD17IU-016AW(DZ)

16127100A04810


MAIN OFFICE
Blasco de Garay, 4-6
08960 Sant Just Desvern
(Barcelona)
Tel. +34 93 480 33 22
http:// www.frigicoll.es/
http://www.kaysun.es/en/

MADRID
Senda Galiana, 1
Polígono Industrial Coslada
Coslada (Madrid)
Tel. +34 91 669 97 01
Fax. +34 91 674 21 00
madrid@frigicoll.es