OPERATION MANUAL

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

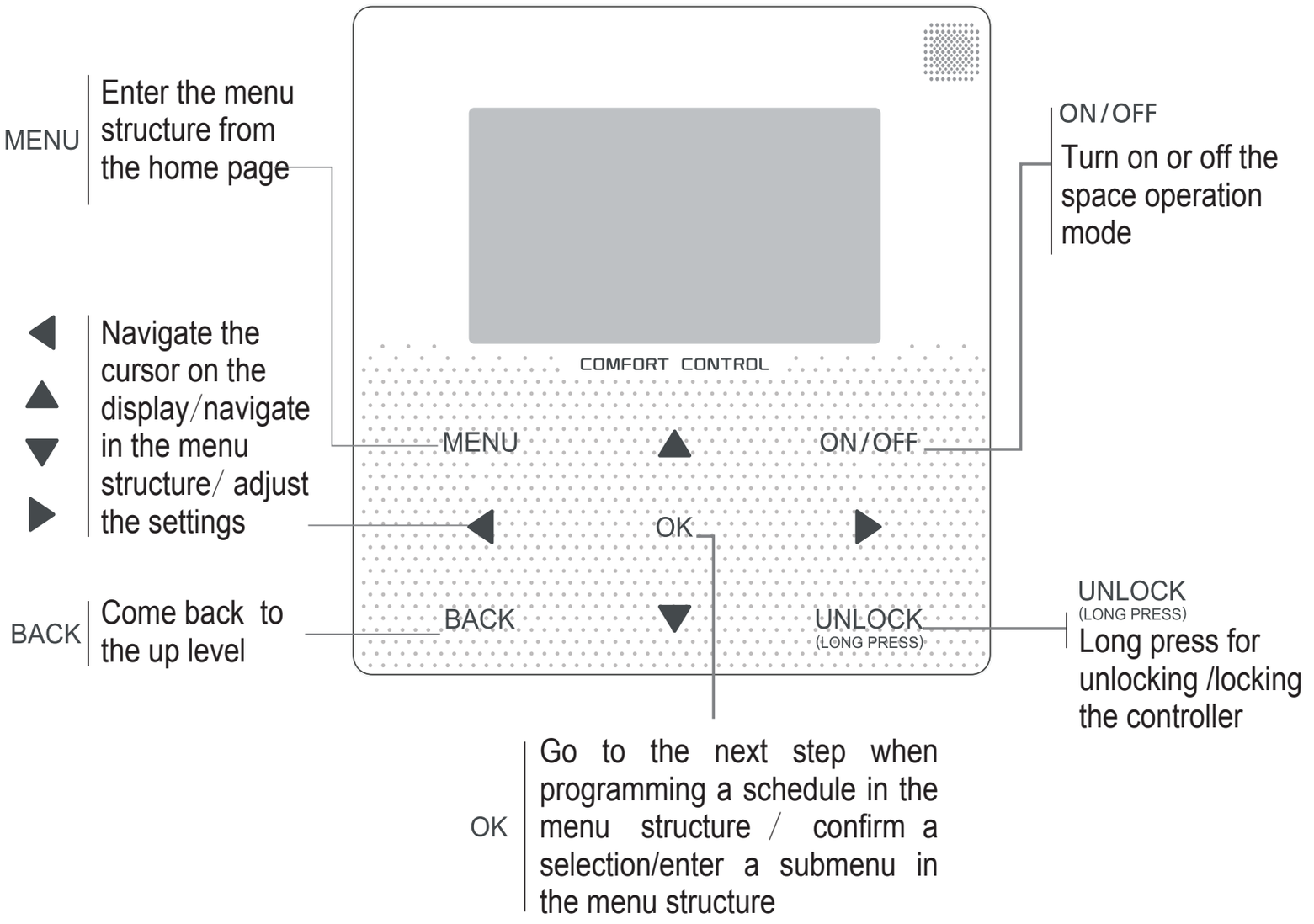
Icon	Name
	It indicates "prohibited". The specific content of prohibition is provided using graphics or text in the icon or nearby.
	It indicates "mandatory". The specific mandatory content is provided using graphics or text in the icon or nearby.

Warning	Entrusted installation	Entrust your distributor or a professional to install the product. The installation operator must have acquired the relevant professional knowledge. 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.

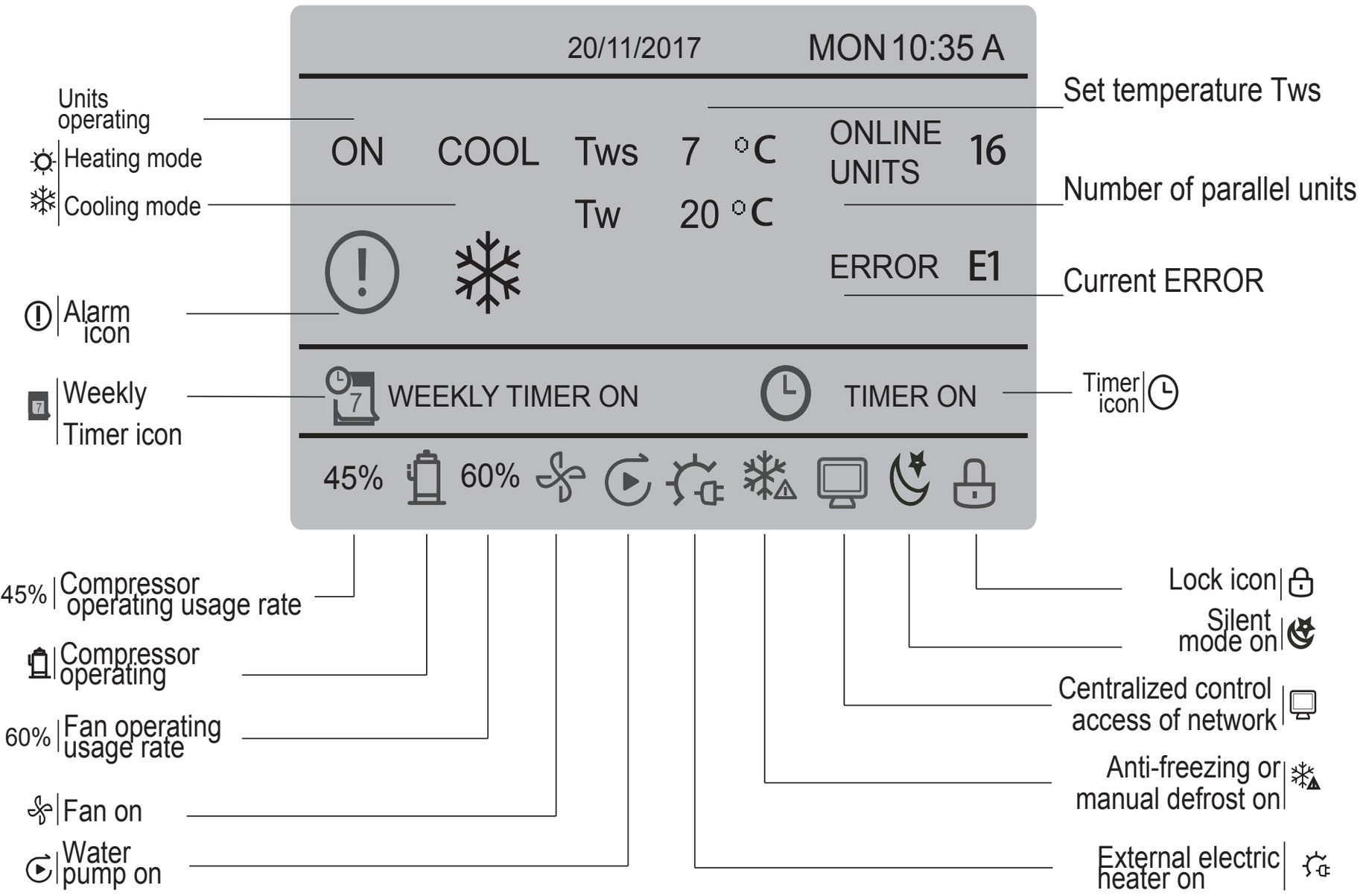
⚠Caution

- 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



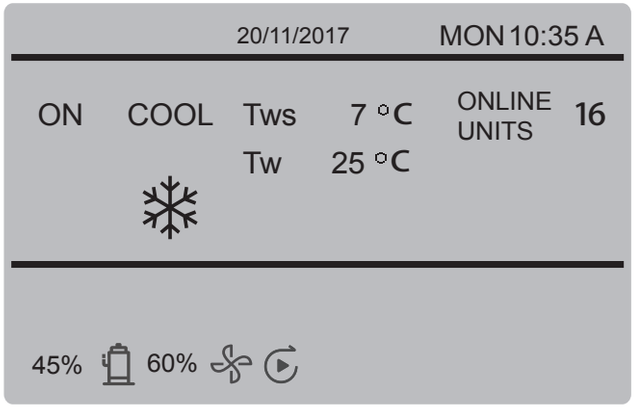
3 Menu Operations

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

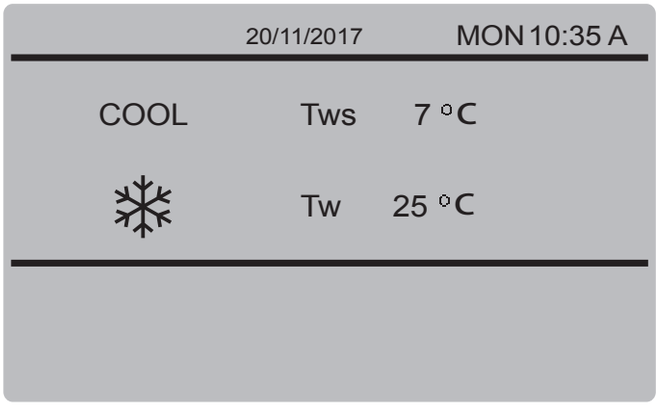
When the wired controller is unlocked and the unit is on, "ON/OFF" can be pressed to power off the unit under the home page only; when the unit is off, press "ON/OFF" to power on the unit.



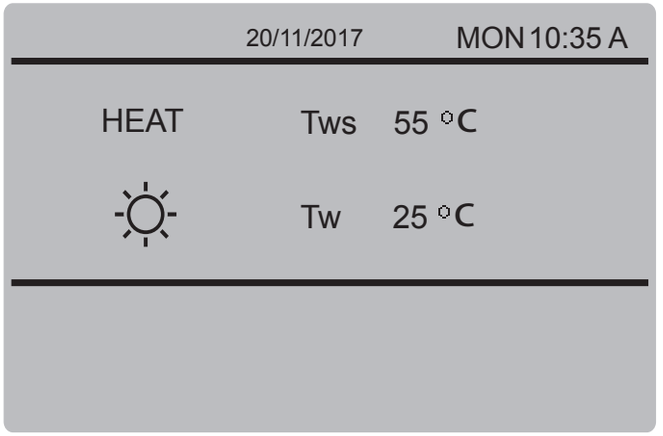
3.3 Setting Mode

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

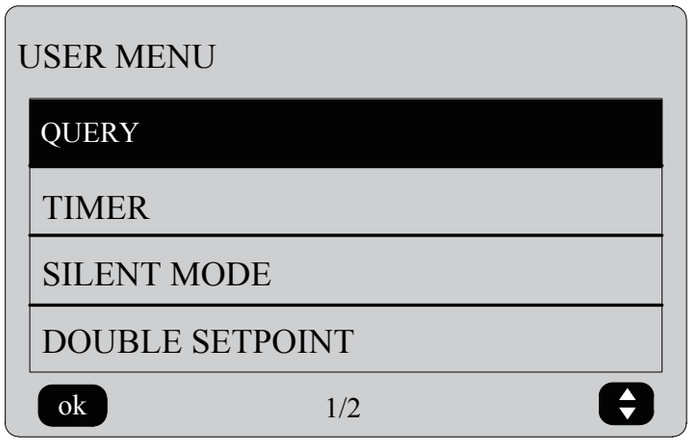


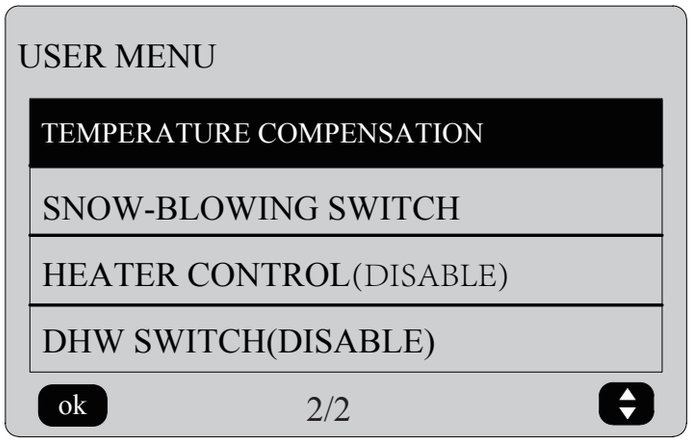
b. Heating mode



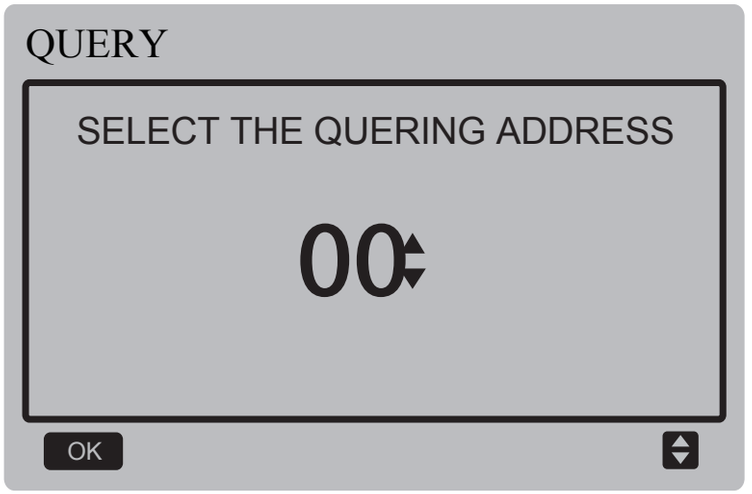
3.4 User Menu

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

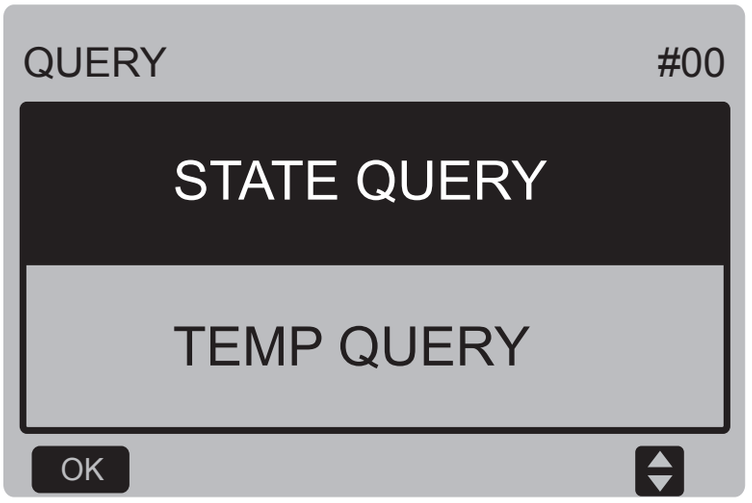




Select "QUERY" in the "USER MENU" interface to access the query function. The interface display and operation are as follows:

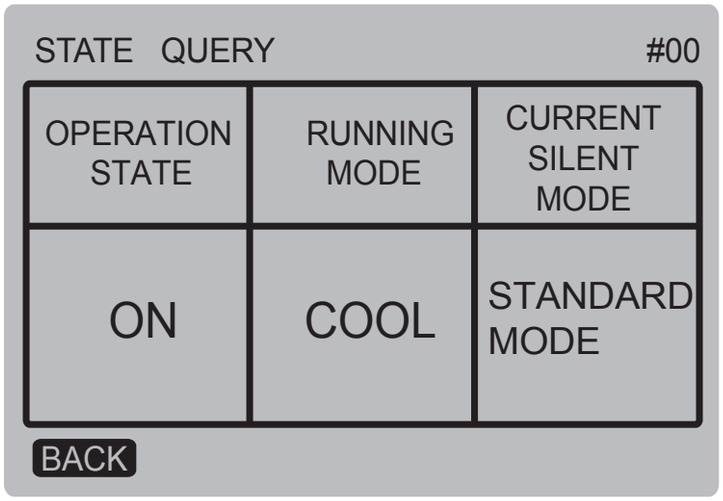


The user first uses the "▼" and "▲" buttons to select the address of module to view (the offline address is skipped automatically). Press the "OK" button to access the next submenu or press "BACK" to go back to the previous interface; during operation on the menu page, press "BACK" to go back to the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



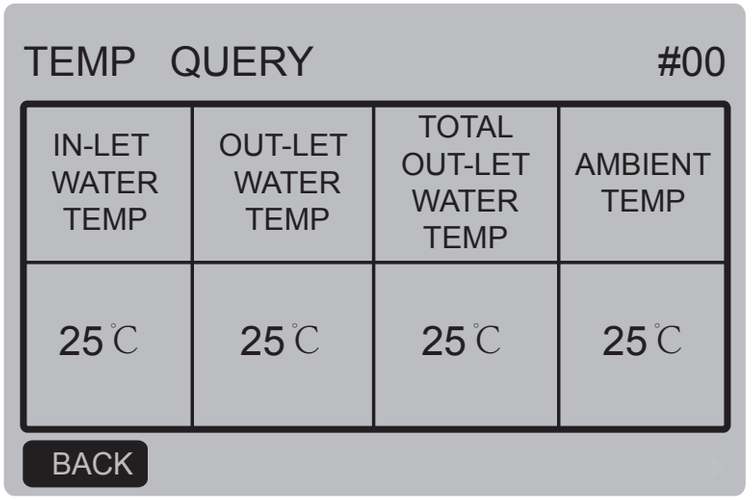
◆ State query:

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



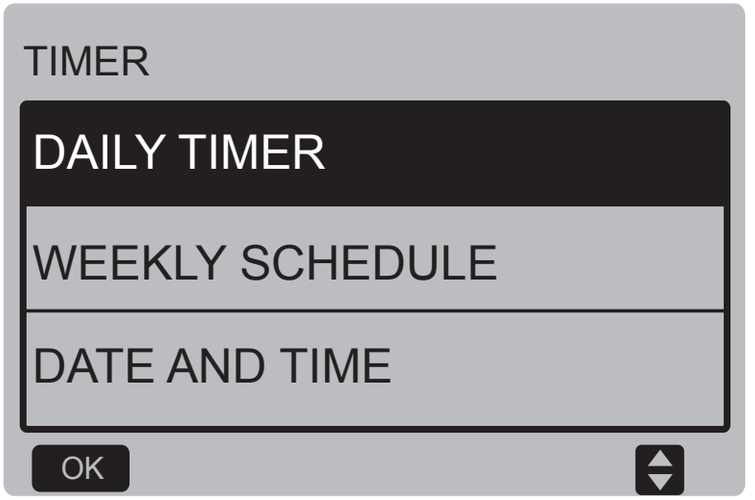
◆ Temp query

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



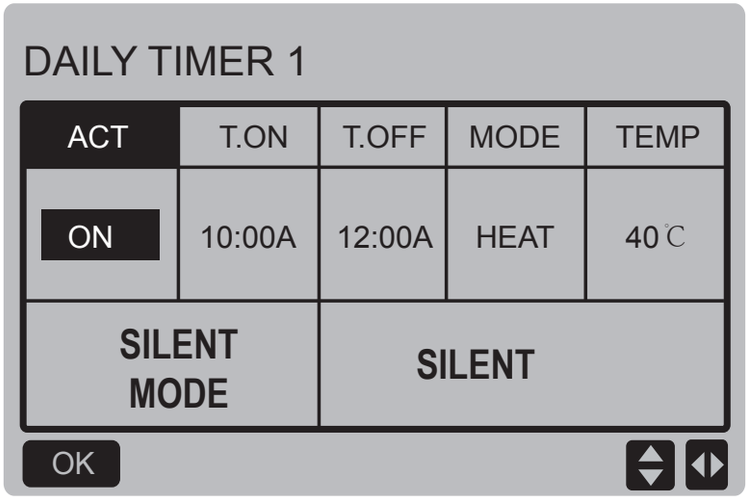
◆ Setting the timer:

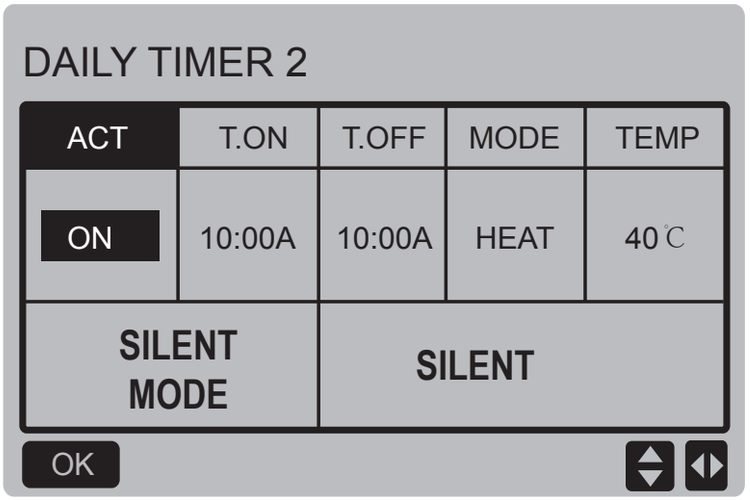
Press "▼" and "▲" buttons to select "TIMER" in the "USER MENU" interface, and press the "OK" button to enter the interface. The interface display is as follows:



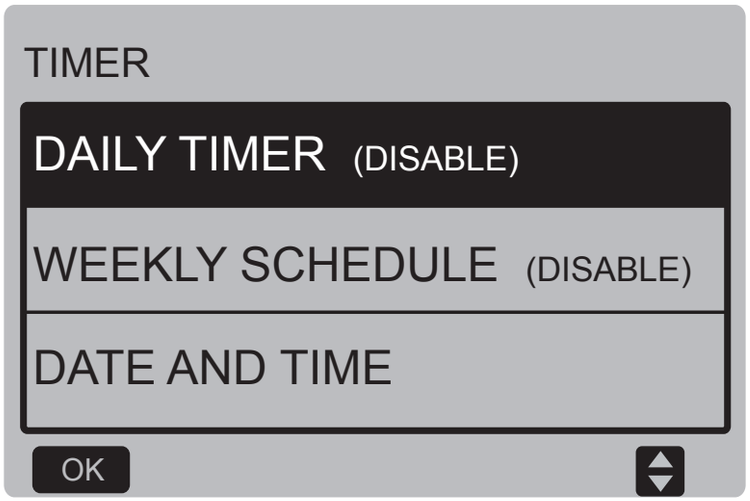
◆ Setting the daily timer

Press "▼" and "▲" buttons to select "DAILY TIMER" in the "TIMER" interface, and press the "OK" button to enter the interface. The interface display is as follows:





After MODBUS control and the remote control of the external machine are used, the daily and weekly time settings of the wired controller are invalid, and users cannot enter the timing menu for setting, the daily timer and weekly schedule promote “DISABLE” on the user menu/time interface.



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 setted across days, but "WEEKLY SCHEDULE" can’t be.

Users can set up to two timers, and set the ON or OFF time (set the interval of time to 10 minutes) 、operation mode(COOL mode and HEAT mode) and temperature setting for each segment of timer.

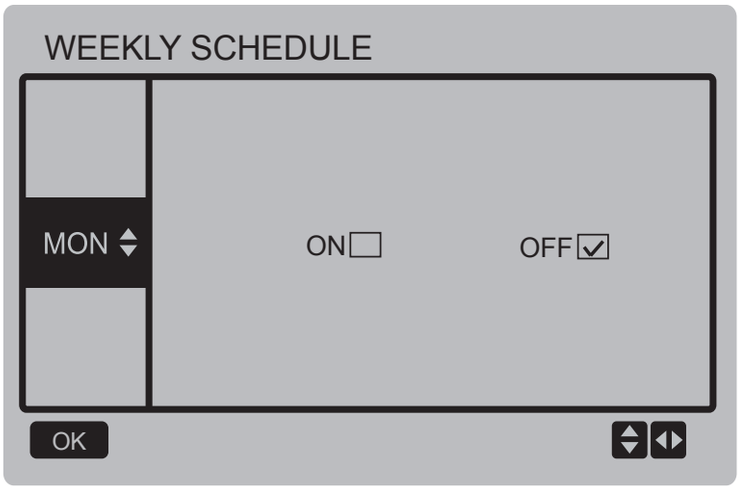
When the cursor stays at “DAILY TIMER 1”,press "◄" and "►" to select “TIMER 1” or “TIMER 2”. Press "▲" and "▼" to select “DAILY TIMER 1”, ACT, “SILENT MODE”. Press the"ON/OFF" button to enable or disable daily timer function.

Press the "◄" and "►" buttons to select the start time T.ON, end time T.OFF, mode and temperature to be set, and then press the "▲" and "▼" buttons to set the time, mode, and temperature value.

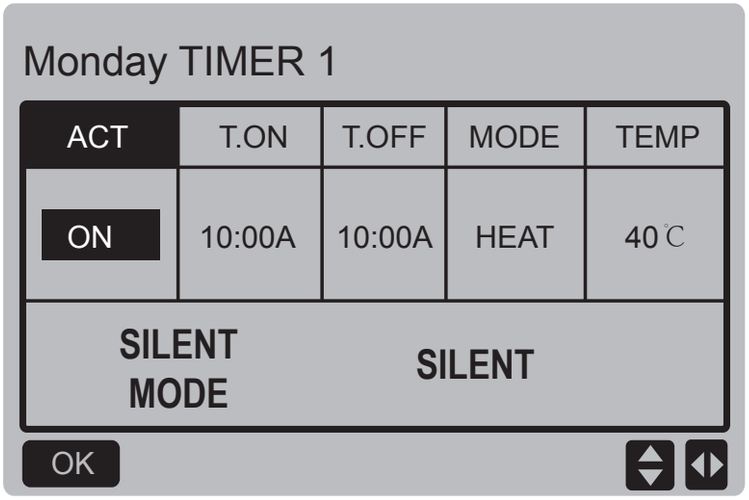
When the cursor stays at “SILENT MODE”,press "◄" and "►" to select silent mode including “STANDARD”, “SILENT”, “SUPER SILENT”.

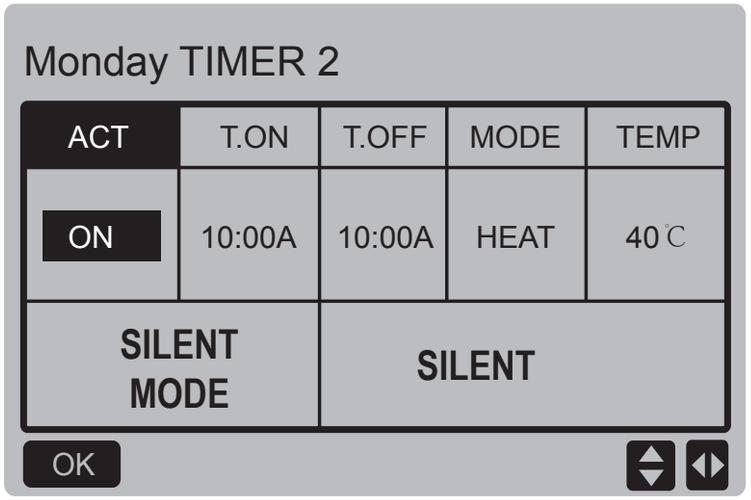
After setting, press "OK" to confirm saving, or press "BACK" to cancel setting and return to the previous interface.
If Time1 T.ON is set the same as Time1 T.OFF, then the setting is invalid, the ACT option for the timer of this segment jumps to "OFF", the setting of Timer2 is the same as that of Timer1, and the timing interval of Time2 can cross with that of Time1.
For example, if Timer1 T.ON is set to 12:00 and Timer1 T.OFF is set to 15:00, then the values of Timer2 T.ON and Time2 T.OFF can be set in the range of 12:00-15:00. If the time interval crosses, the machine will be powered on at the time T.ON which is set in Timer1 or Timer2,and will be powered off at the time T.OFF which is set in Timer1 or Timer2.
After the daily timer function setting is enabled, the icon " TIMER ON" will be displayed on the home page interface.

◆ Setting the weekly schedule:
Press the "▼" and "▲" buttons to select "WEEKLY SCHEDULE" in the "TIMER" interface, and press the "OK" button to enter the interface. The interface display is as follows:

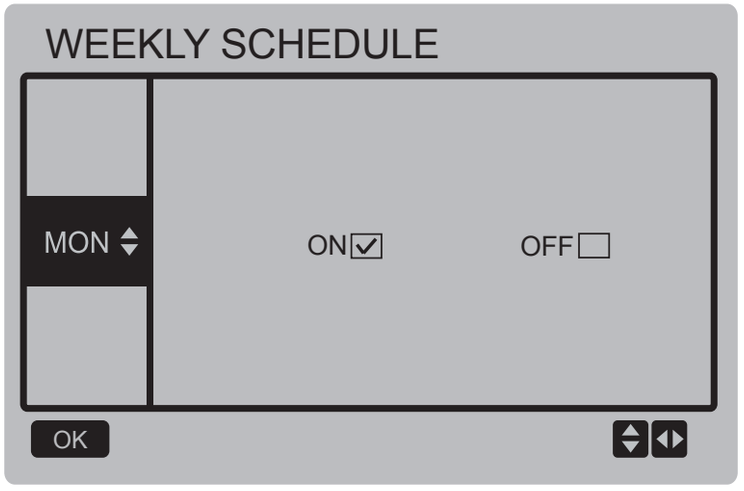


Press "▲" and "▼" bottons to set the day the user want from monday to sunday. and press the "OK" button or press"◄" and "►" buttons to choose "ON" then press "OK" button to enter the time setting interface. The interface is as follows:





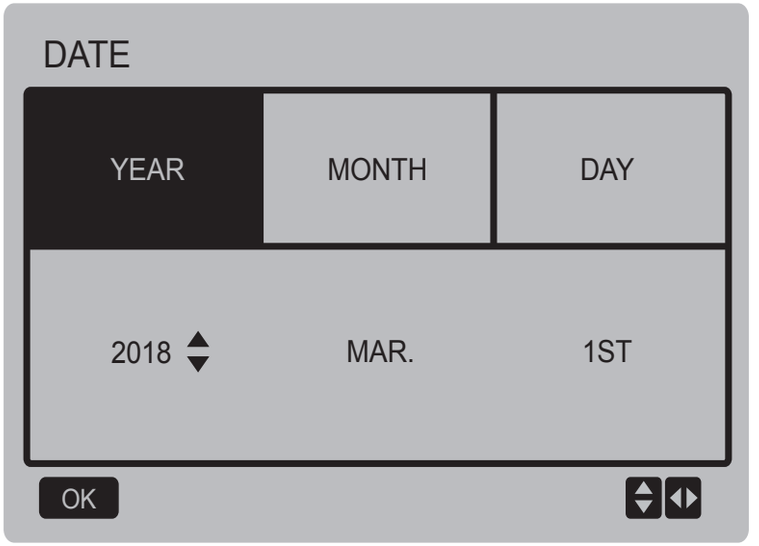
The operation is the same as the operation of daily timer.
When the setting of ACT is ON, then press the "OK" button to enter the interface is as follows:



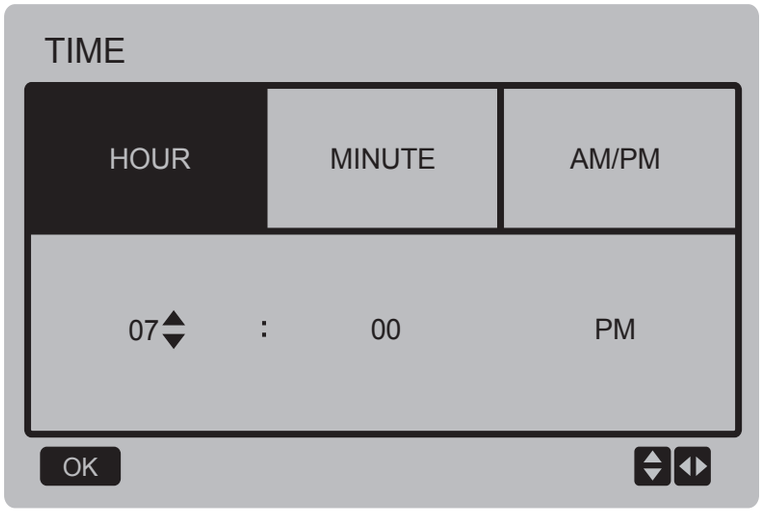
After the weekly schedule funtion setting is enabled,the icon "WEEKLY TIMER ON" will be displayed on the home page interface.

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

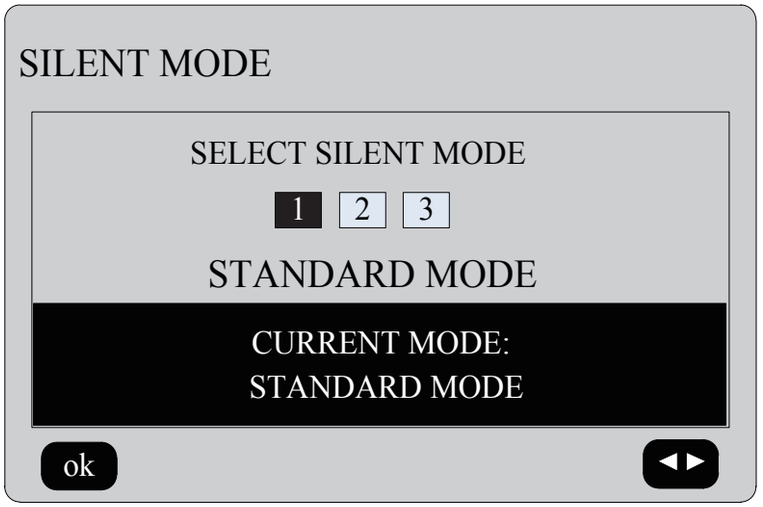
Press the "▲" and "▼" buttons to select the date and time to be set, and press the "OK" button to access the lower-layer submenu:



Date setting operation instructions:
Press the "◄" and "►" buttons to select "YEAR", "MONTH" and "DAY", press the "▲" and "▼" buttons to set 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.

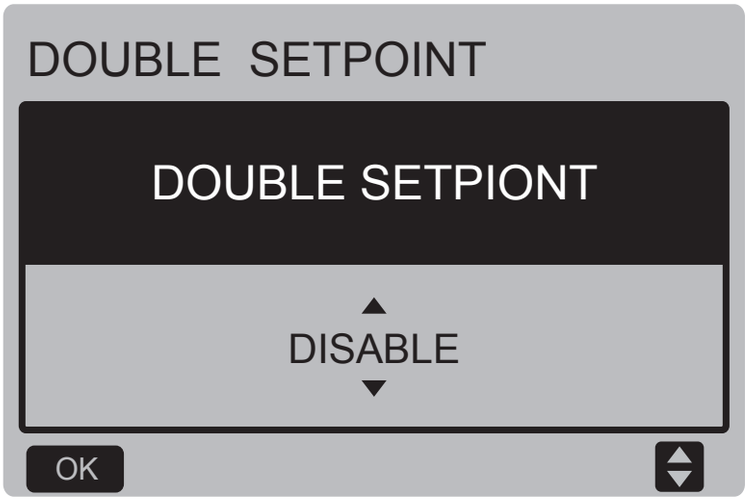


◆ Silent mode :
Press the "▲" and "▼" buttons to select "SILENT MODE" in the "USER MENU" interface, and press the "OK" button to enter the interface. The interface display is as follows:

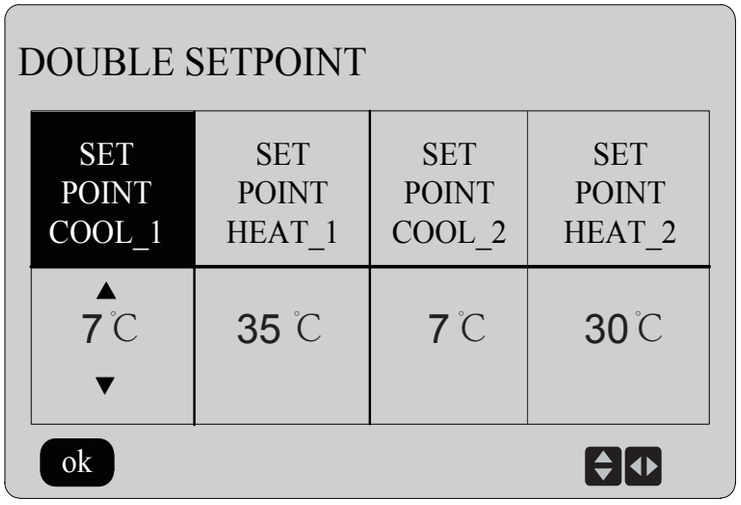


Press the "◄" and "►" buttons to set the parameter, and press the "OK" button to save the setting and return to the previous interface,or press the "BACK" button to cancel the setting and return to the previous interface.
After the silent mode function setting is enabled,the icon " " will be displayed on the home page interface.

◆ Double Setpoint:
Press the "▲" and "▼" buttons to select "DOUBLE SETPIONT" in the "USER MENU" interface, and press the "OK" button to enter the interface. The interface display is as follows:

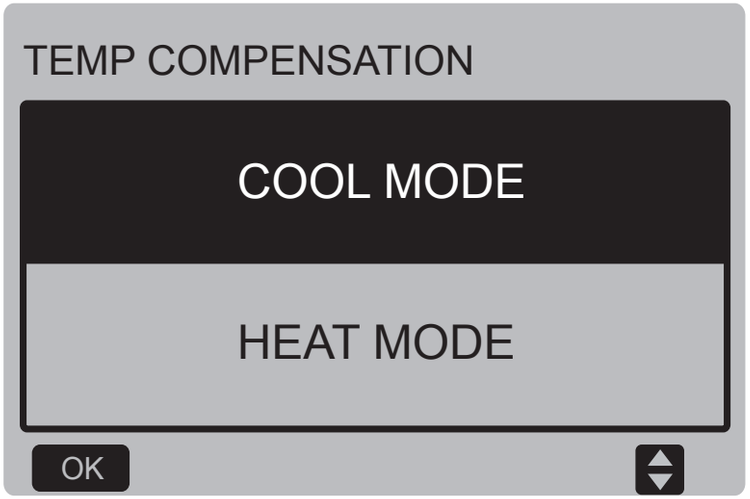


Press the "▲" and "▼" buttons to select the ENABLE or DISABLE, and press the "OK" button to save the setting.If setting the DISABLE then return to the previous interface.If setting the ENABLE then enter the interface as follows:

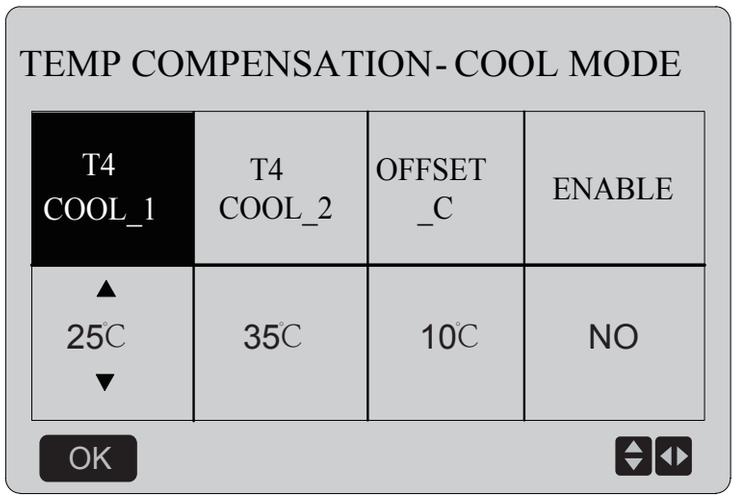


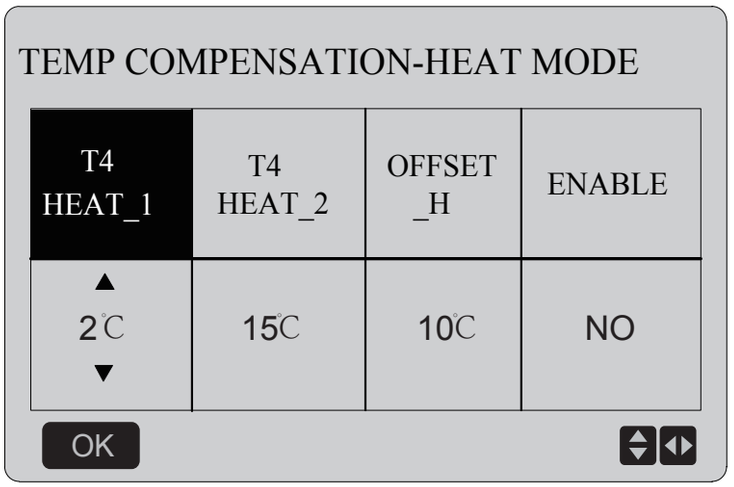
Operation instructions:
Press the "◄" and "►" buttons to select setpoint mode, press the "▲" and "▼" buttons to set the parameter value,and press the "OK" button to save the setting and return to the previous interface,or press the "BACK" button to cancel the setting and return to the previous interface.
The main control board detects if the port "TEMP-SW"is closed,and if the port is closed the units will run according to the temperature of "SET POINT COOL_2" or "SET POINT HEAT_2",other wise ,the units run according to the temperature of "SET POINT COOL_1" or "SET POINT HEAT_1".

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

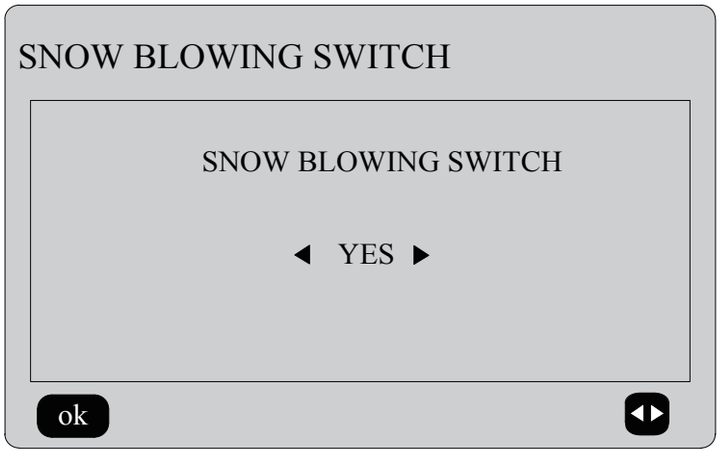




Operation instructions:
Press the "◄" and "►" buttons to select the cool mode or the heat mode, press the "▲" and "▼" buttons to adjust the parameter value.
press the "OK" button to save the setting and return to the previous interface,or press the "BACK" button to cancel the setting and return to the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

◆Snow-Blowing switch

press the "▼" and "▲" buttons to select “SNOW-BLOWING SWITCH” in the “USER MENU” interface, press the "OK" button ,and the interface display is as follows:

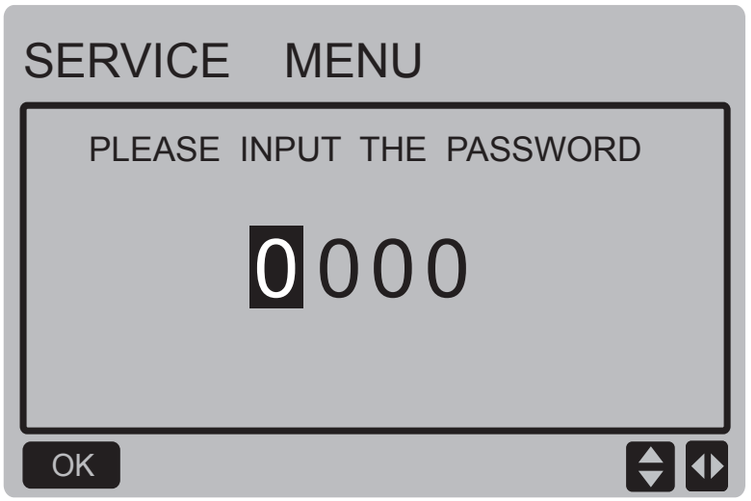


Press the "◄" and "►" buttons to select “YES” OR “NO”, press the "OK" button to select. The function of snow-blowing switch is valid when selecting “YES”, while the function of snow-blowing switch is invalid when selecting “NO”.

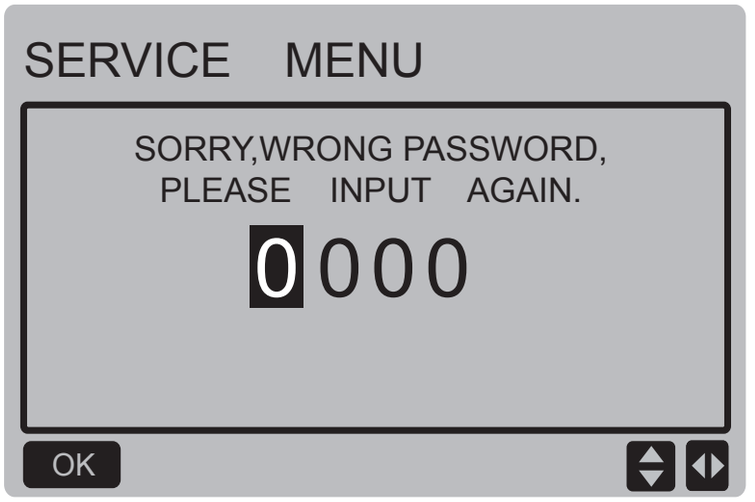
3.5 Setting SERVICE MENU

◆ Entering the password:

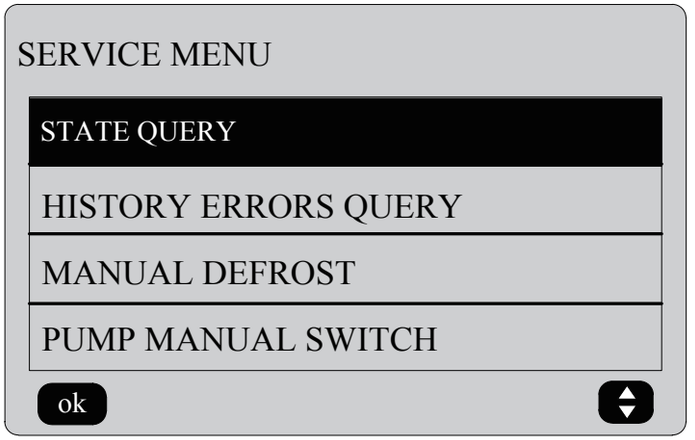
Select "SERVICE MENU", and press the "OK" button to enter the interface. The screen prompts the user to enter the password, as shown below:



The initial password must be obtained by a professional. 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:



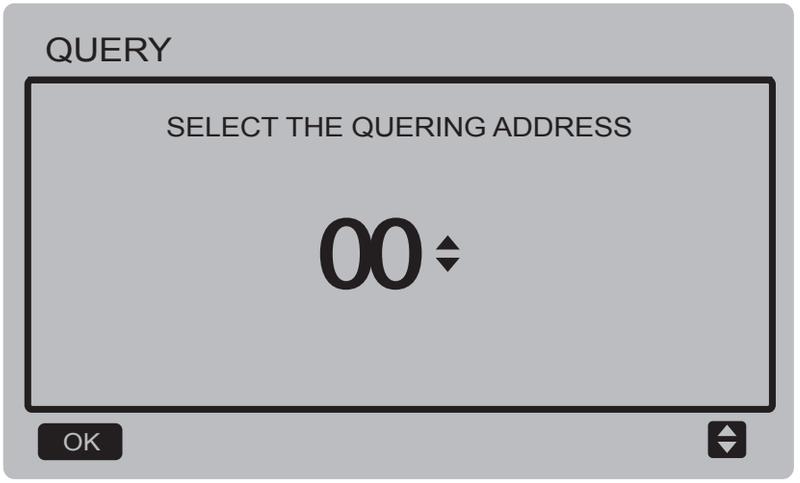
The query interface as follows is displayed if the input is correct:



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

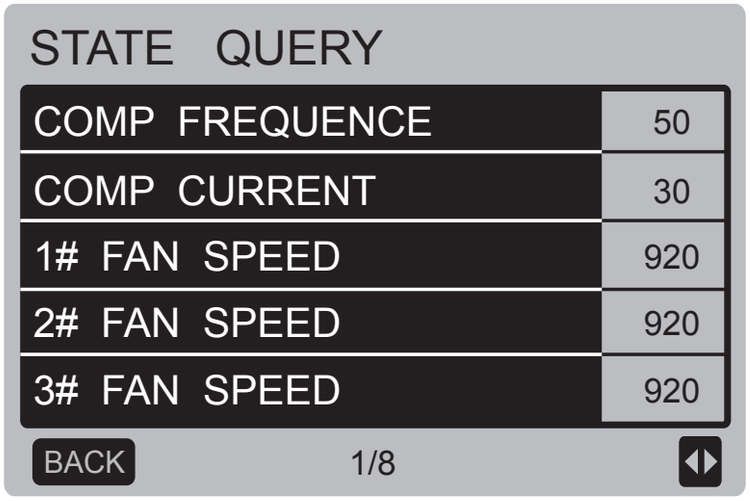
Select "STATE QUERY", and press the "OK" button to enter the interface. The interface display is as follows:

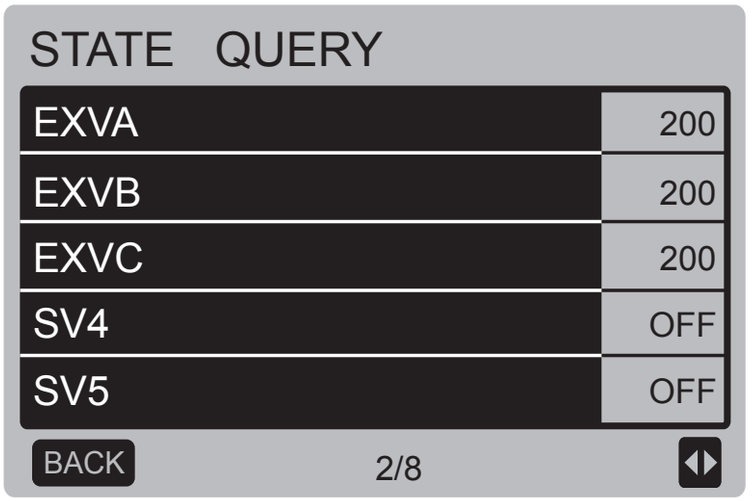


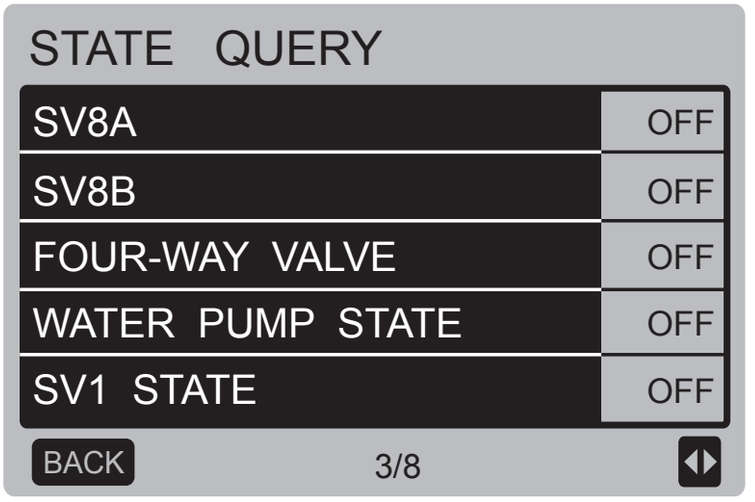
Press the "▼" and "▲" buttons to select the address of module to view (the offline address is skipped automatically). Press the "OK" button to access the lower-layer submenu, or press "BACK" to go back to the previous interface. During operation on the menu page, press "BACK" to go back to the previous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

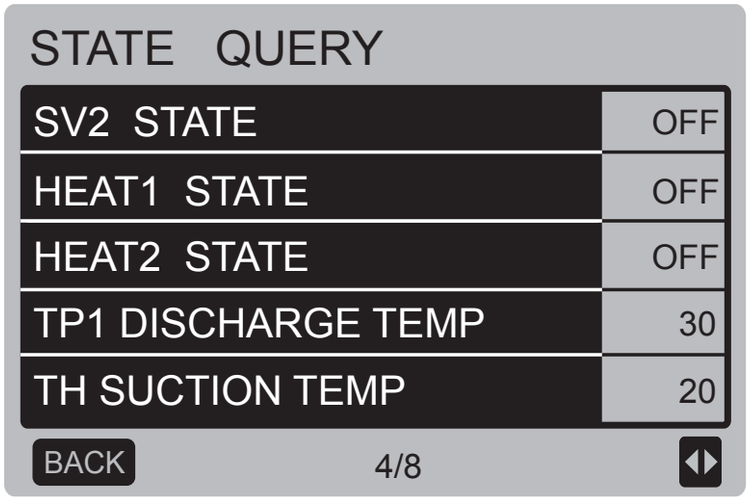
Take the mainboard (0#) as an example to make further explanation of the submenu.

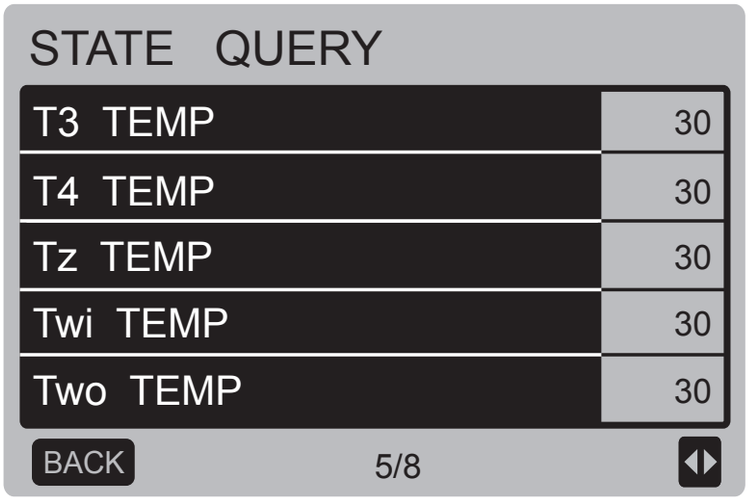
After the mainboard is selected, the running state of mainboard is as shown below:

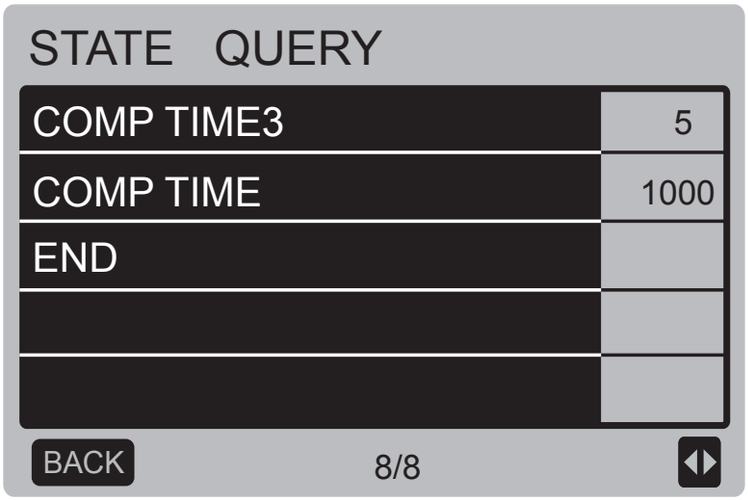


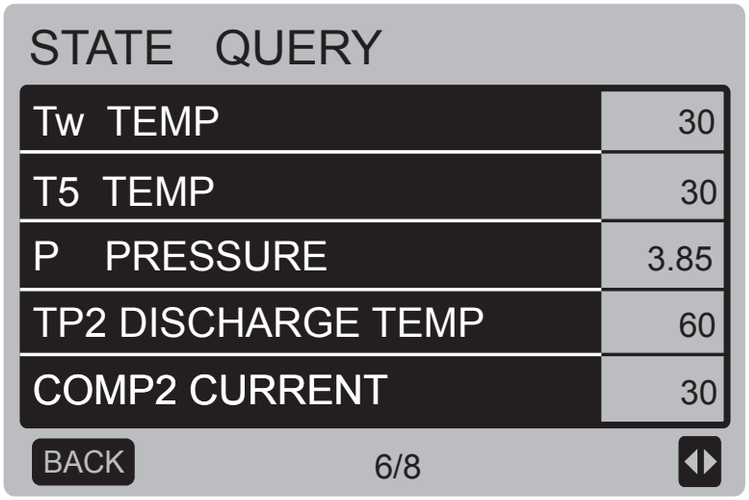








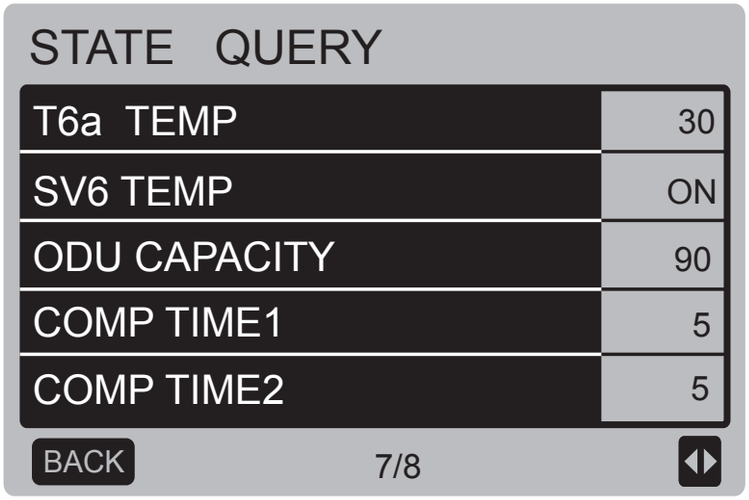


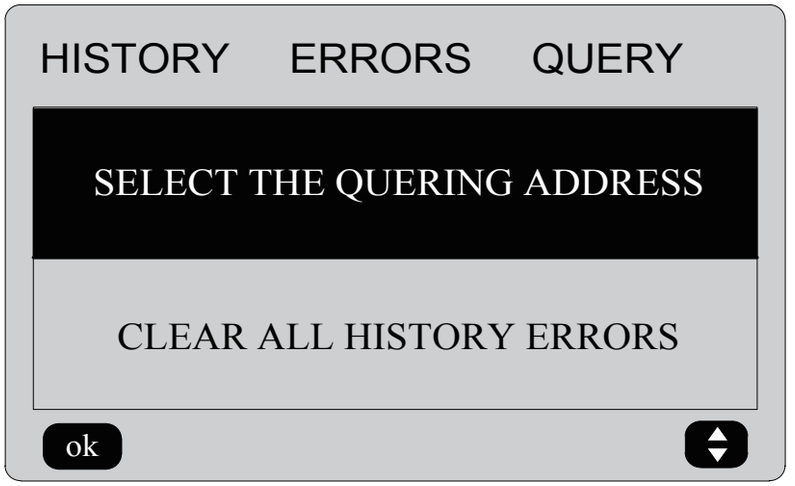


Press the "◄" and "►" buttons to select the different page.

◆ 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:





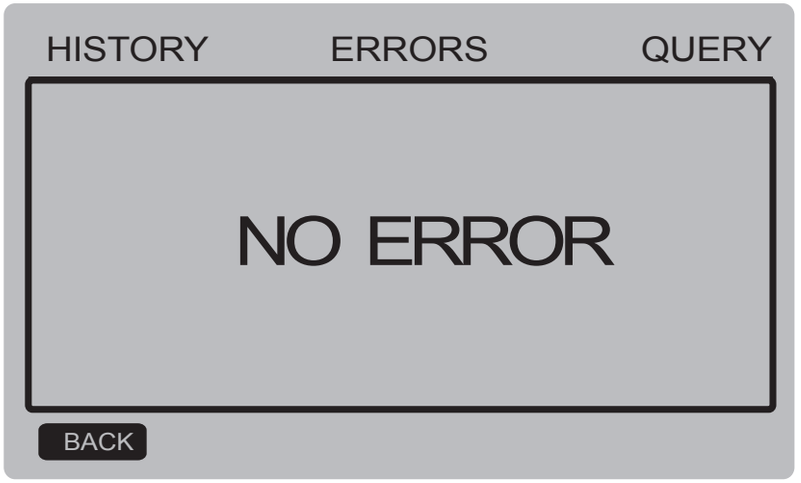
Press the "▼" and "▲" buttons to select the desired option, and press the "OK" button to access the interface.Press the "BACK" button to cancel the setting and return to the previous interface.

◆ Select the quering address

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

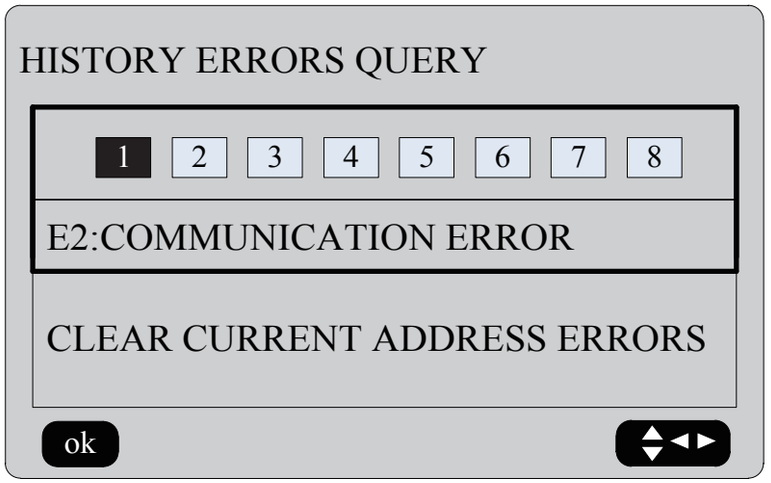
Press the "▼" and "▲" buttons to select the address of module to view (the offline address is skipped automatically). Press the "OK" button to access the lower-layer submenu, or press "BACK" to go back to the previous interface. During operation on the menu page, press "BACK" to go back to the previous 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:

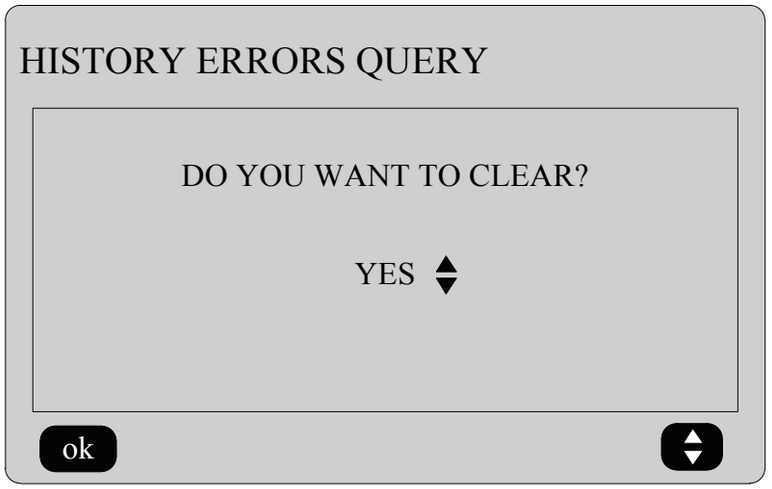


The wired controler can display 8 errors at most.Take the mainboard (00#) as an example to make further explanation of the submenu.

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



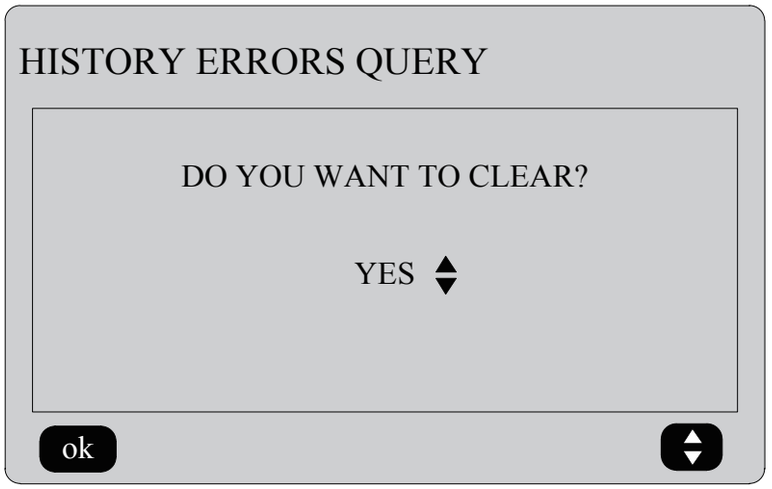
Press the "◄" and "►" buttons to view records of error history,press "OK" button back to "HISTORY ERROR QUERY" interface .Press "▼" and "▲" buttons to select "CLEAR CURRENT ADDRESS ERRORS" and press "OK" button to clear current address error,and enter the interface,the interface is as follows:



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.

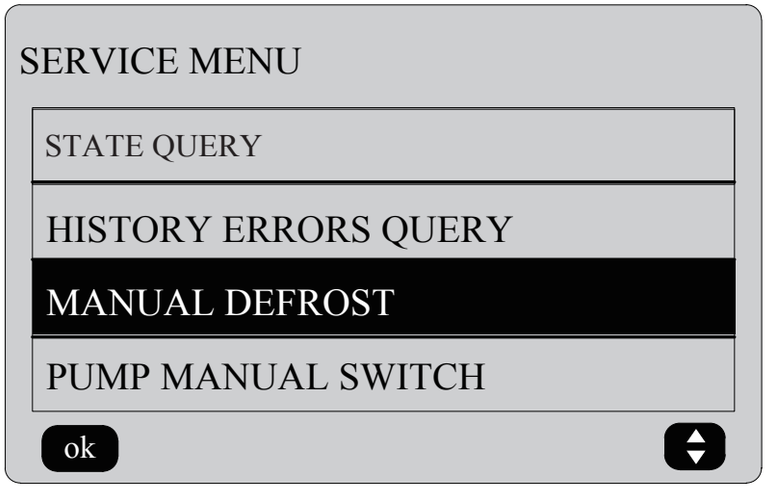
◆ Clear all history errors

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:

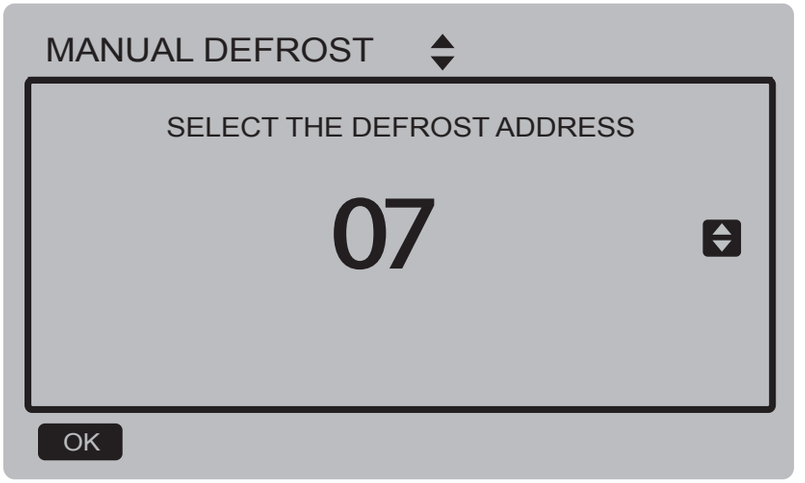


Press the "▼" and "▲" buttons to select the desired option, If "YES" is selected then press the "OK" button to clear all history errors,and return to the "HISTORY ERROR QUERY" interface. If "NO" is selected then press "OK" button to return to the "HISTORY ERROR QUERY" interface directly.

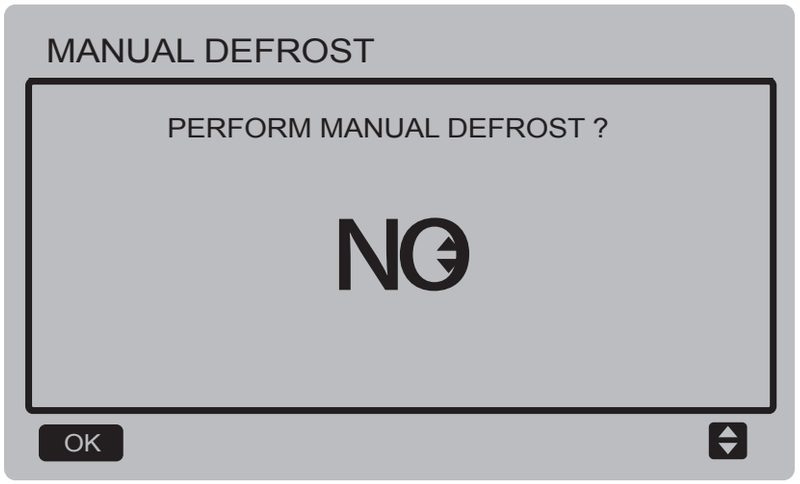
◆ Manual defrost

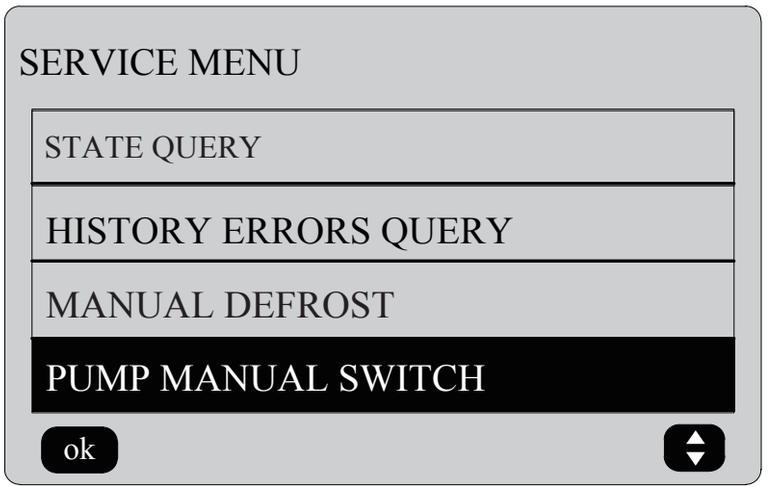


Press "OK" to select "MANUAL DEFROST" in the "SERVICE MENU" interface. The interface displays query address as follows:

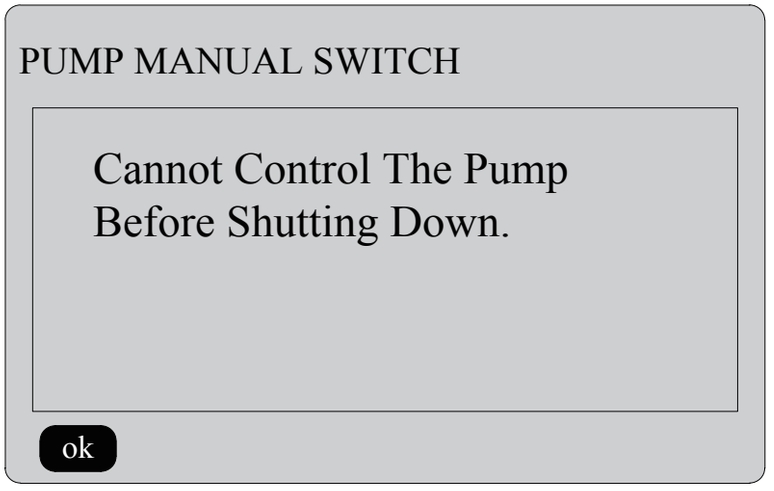


Press "▼" and "▲" to select desired module address, and addresses that are not online are automatically skipped. Press "OK" to enter the interface.





NOTE:
Press "▼" and "▲" to select "YES" or "NO", and press "OK" to save the settings and return the previous interface, while press "BACK" to cancel the settings and return the previous interface. Only settings sent complete can set the next module when returning to the settings interface. "PARAMETER SETTING" is shown on the interface when the send is not completed while it will disappear after sent. This only happens when T3 is below 0℃.

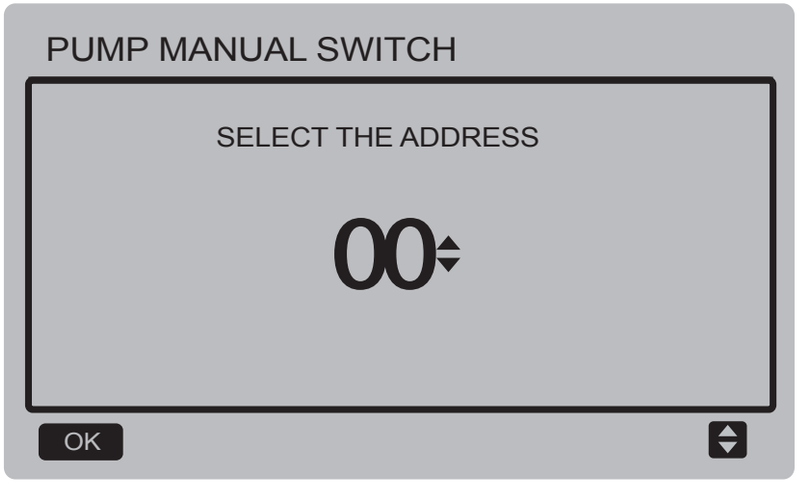


If the main interface shows shutdown, it will enter the following interface to select pums.

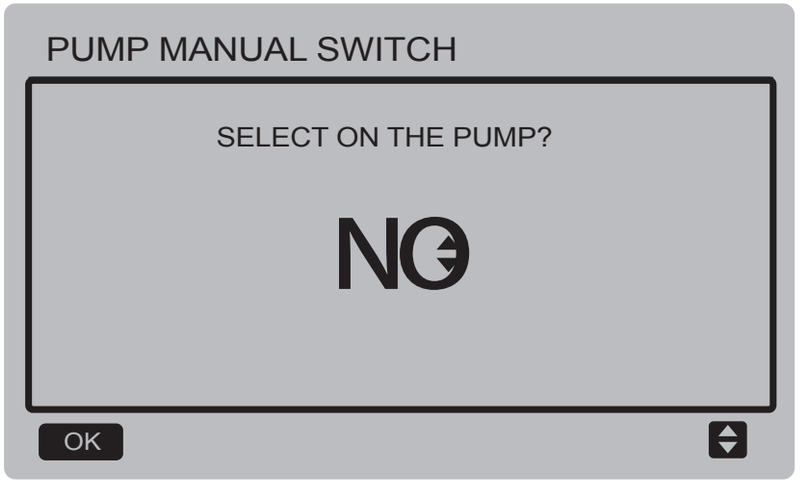
◆ Pump manual switch

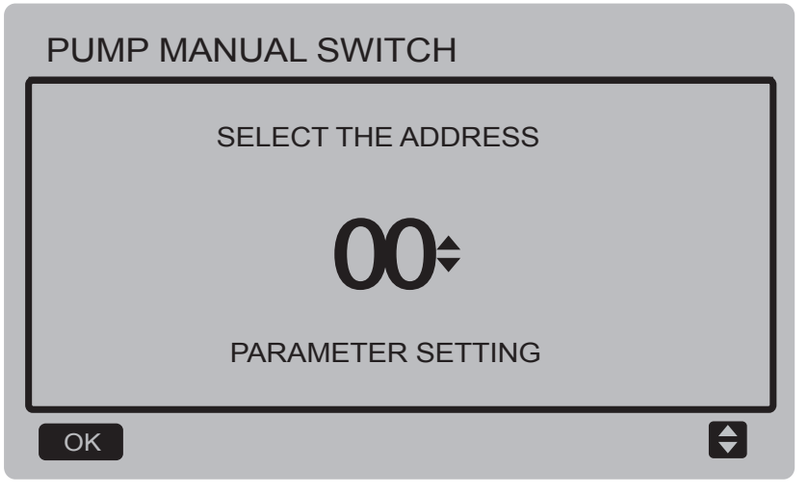
The pump manual switch function is only valid for the main unit.

If The main interface has shown boot, it will show "Cannot Control The Pump Before Shutting Down" after selecting "PUMP MANUAL SWITCH" menu.



If the system has a single pump, the default choice is 00 pump. If the system has multiple water pumps, each pump must be set.
Press "BACK" to return the previous interface.
Press "OK" to enter the enterface which can select the address to force the pump on.



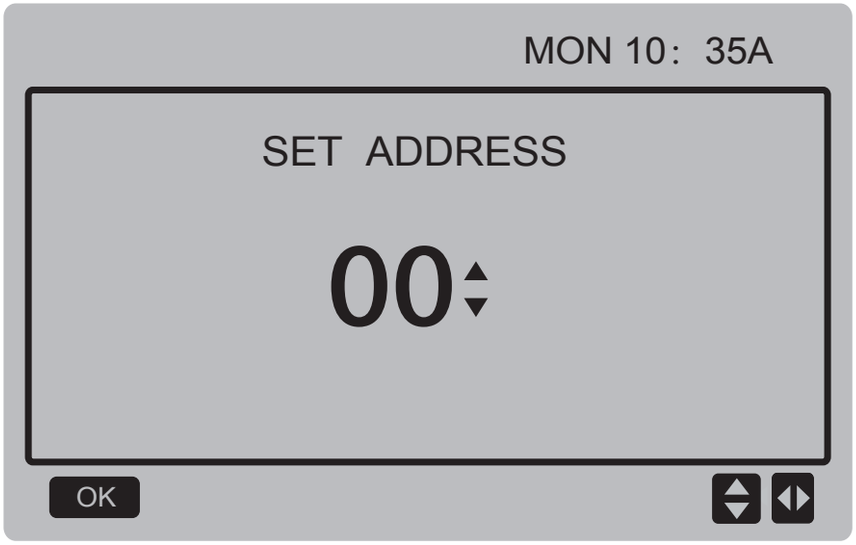


Press "▼" and " ▲" to select "YES" or "NO", and press "OK" to confirm, while press "BACK" to cancel the settings and return to the previous interface.

Select "NO" and press "OK" to return to the previous interface.
Select "YES" and press "OK" to force on local address pump, and return to the previous interface. The interface will prompt "PARAMETER SETTING".

3.6 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 00 to 15.

3.7 Power Failure Memory Function

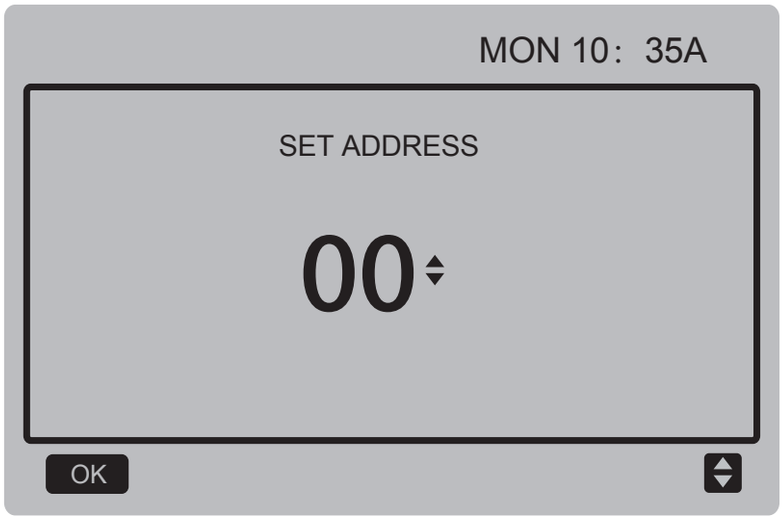
The power supply to the system fails unexpectedly during operation. When the system is powered on again, the wired controller continues to operate according to the status before the last power failure, including the power-on/off status, mode, set temperature, failure, protection, wired controller address,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

3.8 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.

3.9 Monitoring Setting of Wired Remote Controller

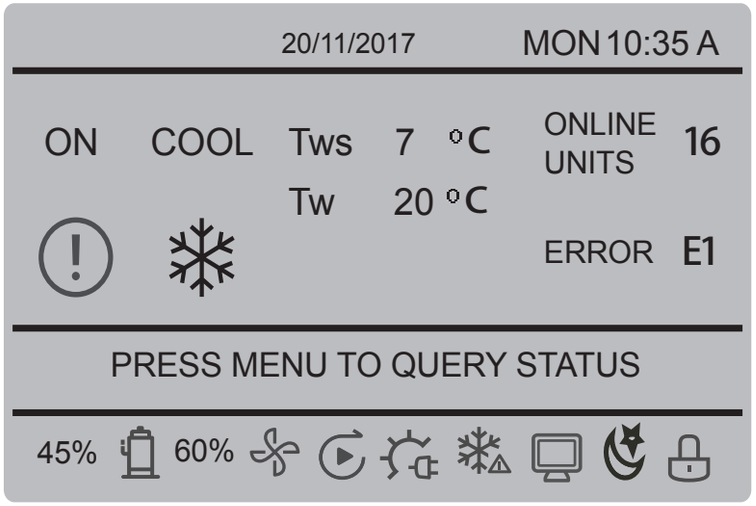
Press the "MENU" and "►" buttons for 3s at the same time to access "SET ADDRESS" interface,The interface display is as follows:



The set address range is 00 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 seted as monitor wired remote controller.

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



When the wired controller is unlockd press "MENU" botton to enter the "SERVICE MENU" function.

3.10 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,the icon " " will be displayed on the home page interface.
2) If the outdoor main control board is in the remote ON/OFF control mode and the wired controller sends an alarm and the icon " " flash, 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.

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.
Imporper 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.

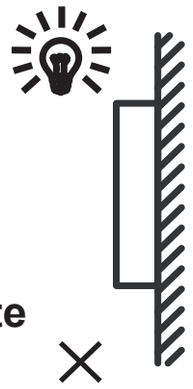
CAUTION

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 occure.

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.

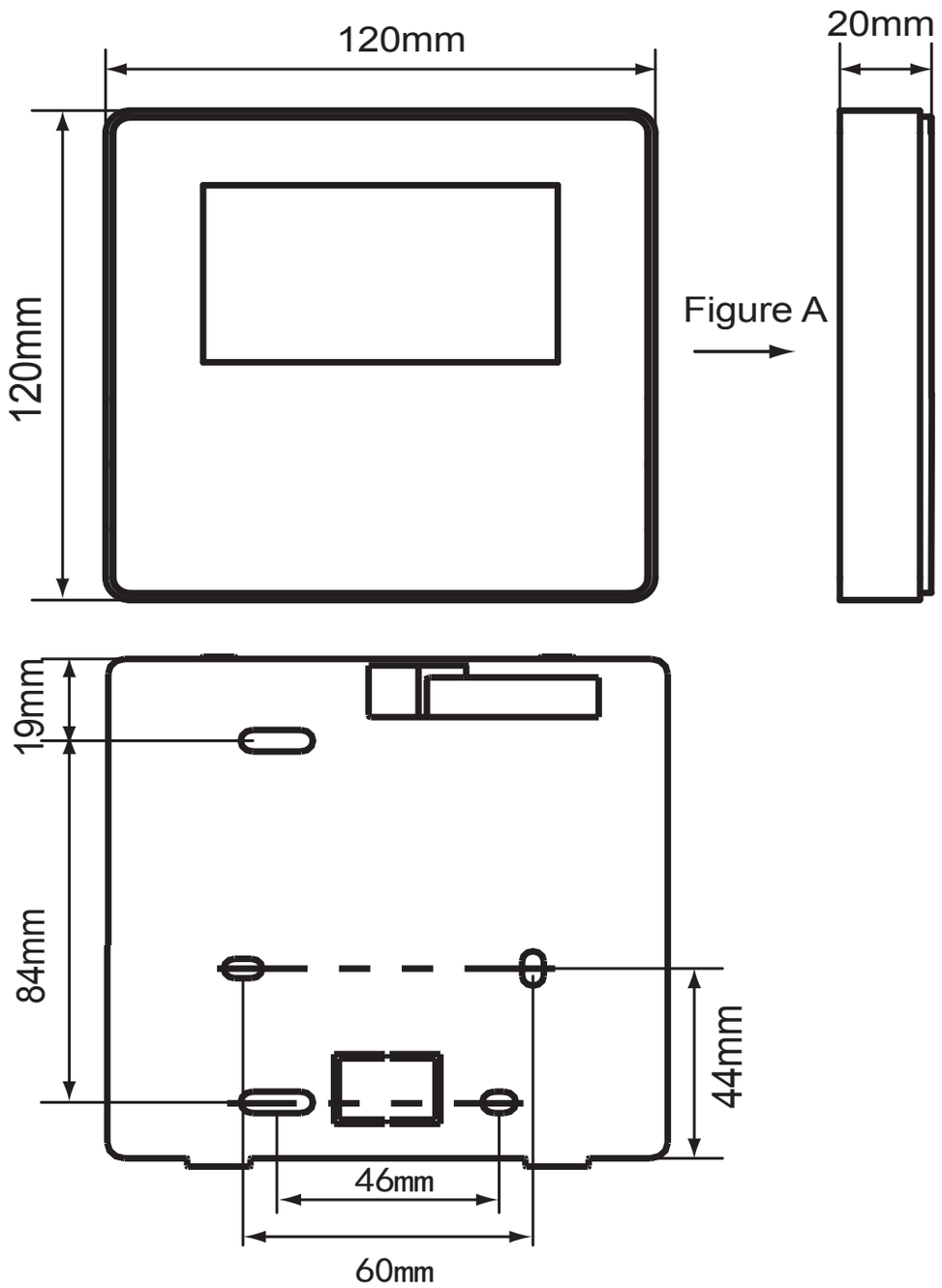
No.	Name	Qty.	Remarks
1	Wire controller	1	————————
2	Cross round head wood mounting screw	3	GB950-86 M4X20 (For Mounting on the Wall)
3	Cross round head mounting screw	2	M4X25 GB823-88 (For Mounting on the Electrical Switch Box)
4	Installation & Owner's Manual	1	————————
5	Plastic bolt	2	This accessory 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:

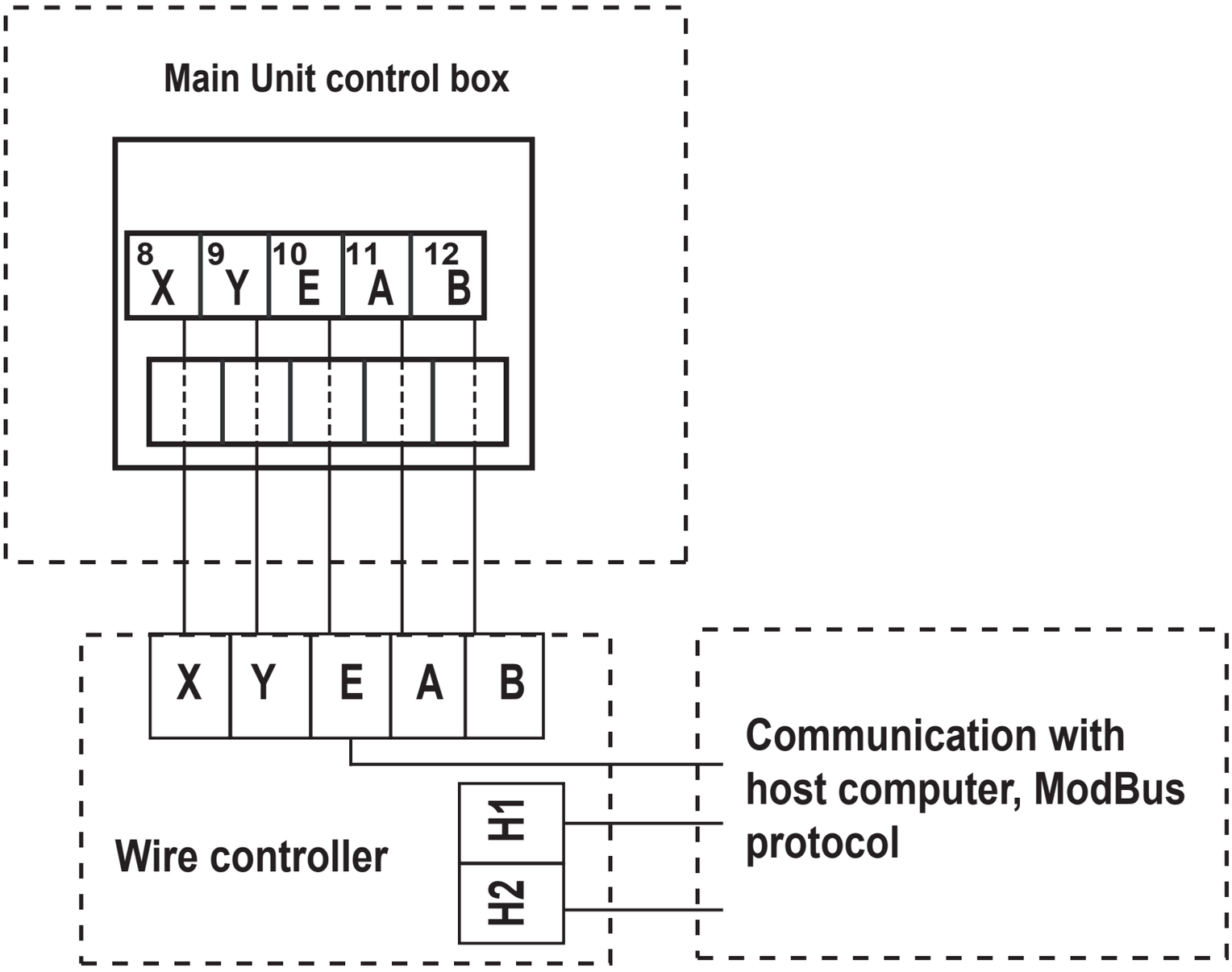
1) This installation manual contains information about the procedure of installing Wired Remote Controller. Please refer to Indoor Unit Installation Manual for connecting between Wired Remote Controller and Indoor Unit.
2) Circuit of Wired Remote Controller is low voltage circuit. Never connect it with 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

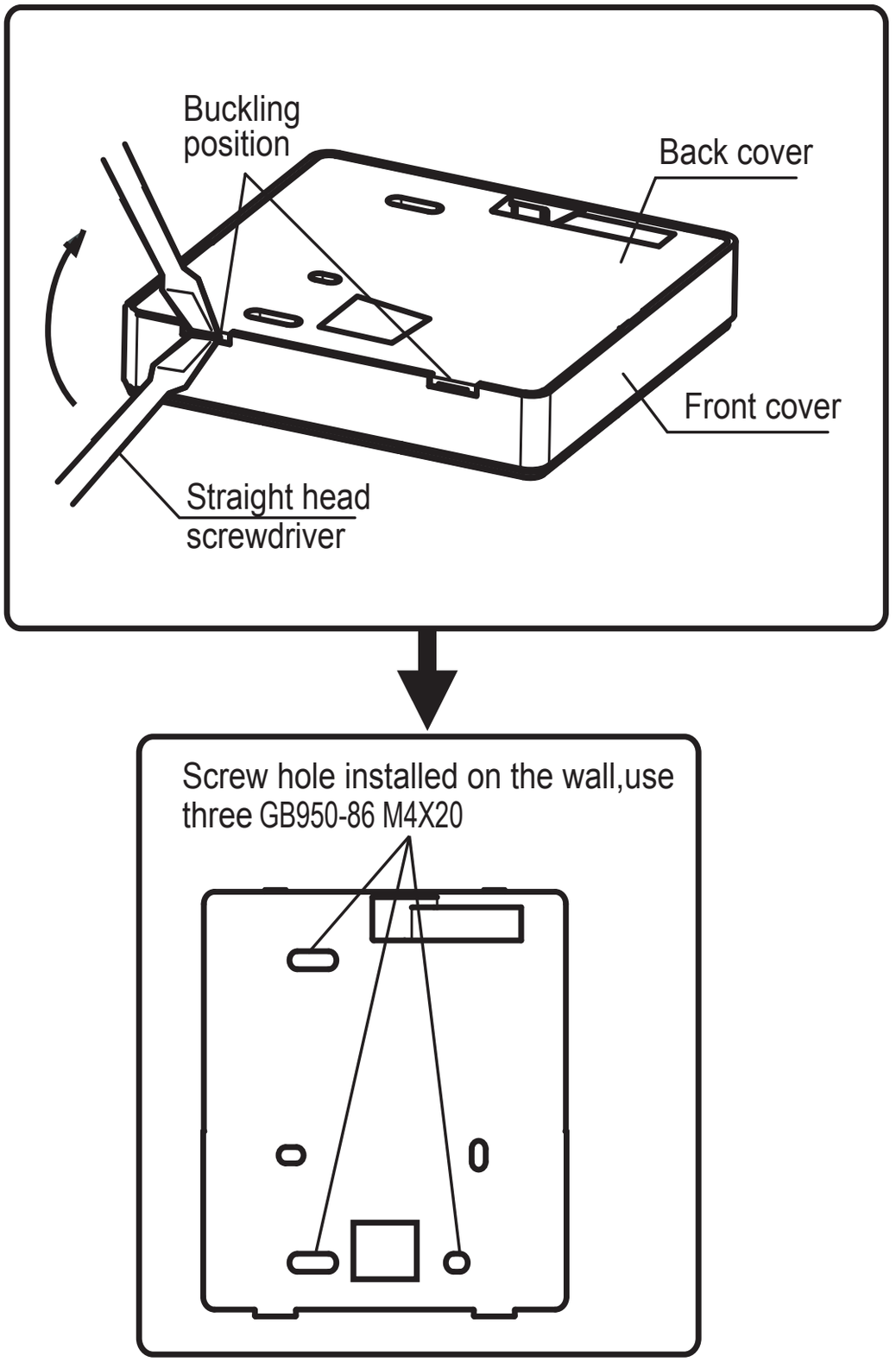


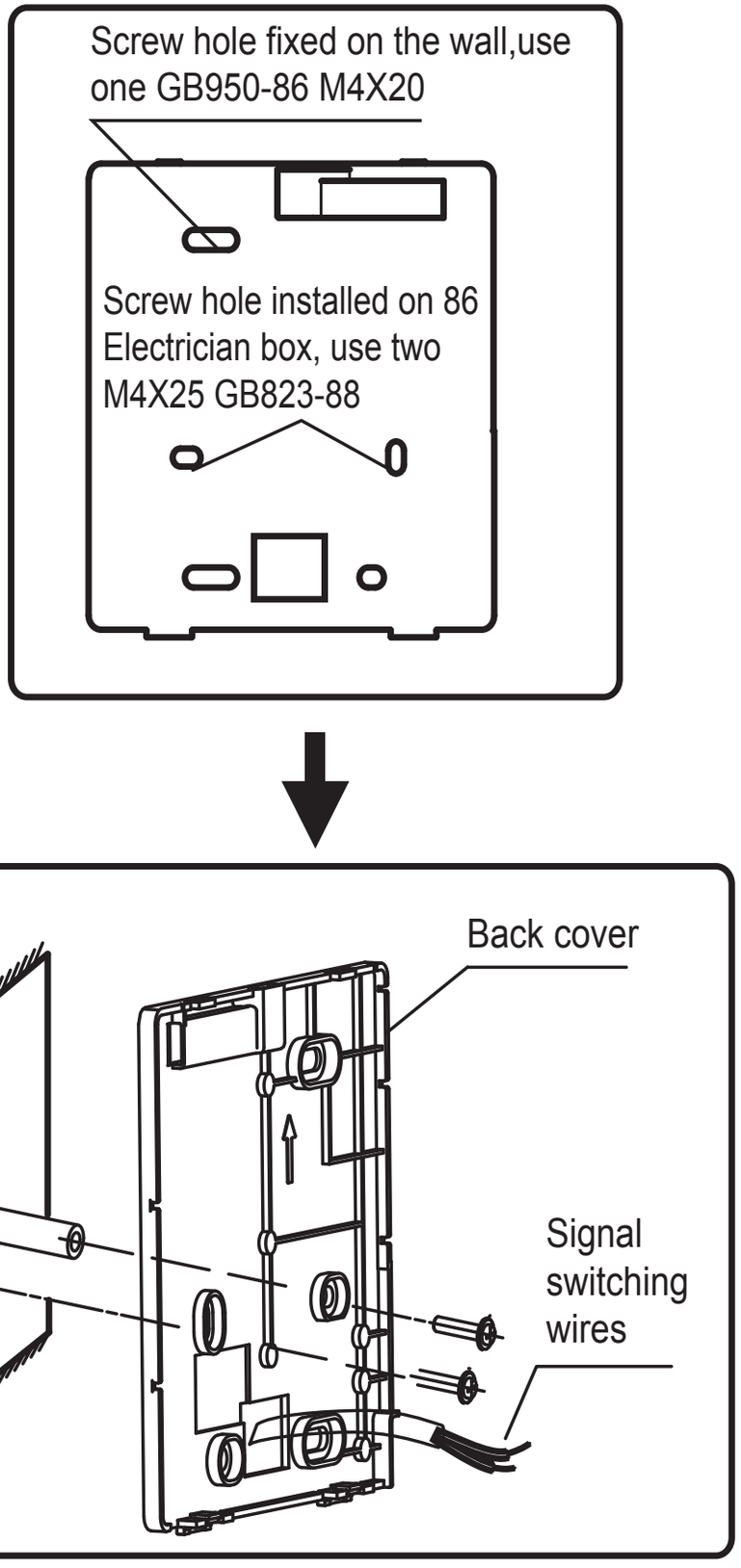
4.3.2 Wiring



Input Voltage(A/B)	8.5VAC
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.

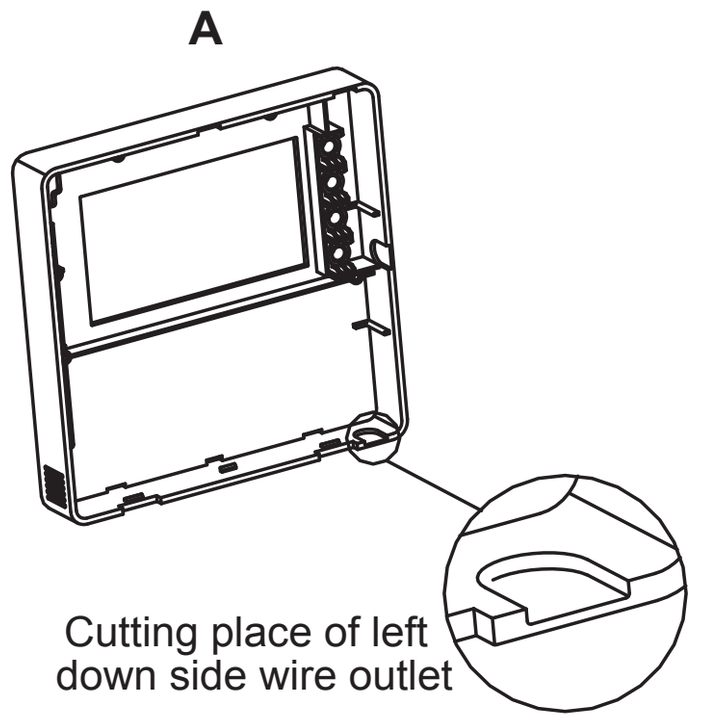
3) Use two M4X25 GB823-88screws to install the back cover on the 86 electrician box, and use one GB950-86 M4X20 screws for fixing on the wall.

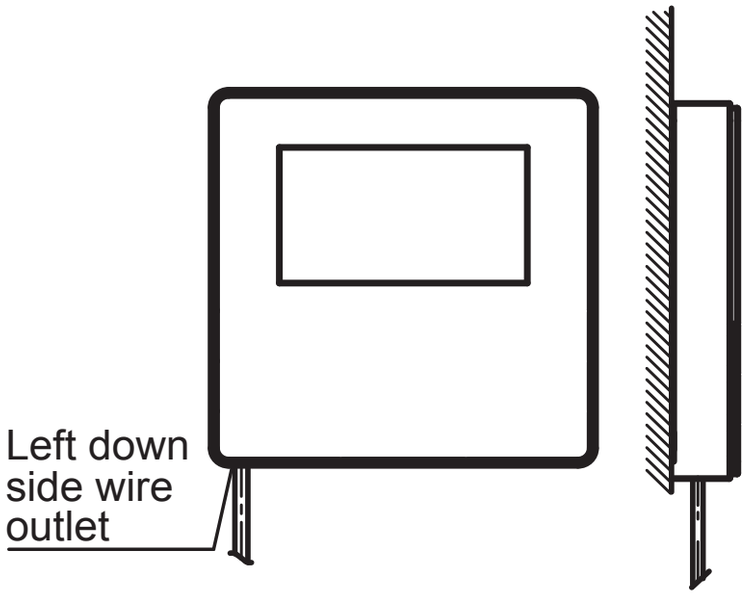
4) Adjust the length of two plastic screw bars in the accessory to be standard length from the electrical box screw bar to the wall. Make sure when install the screw bar to the wall, make it as flat as the wall.

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.

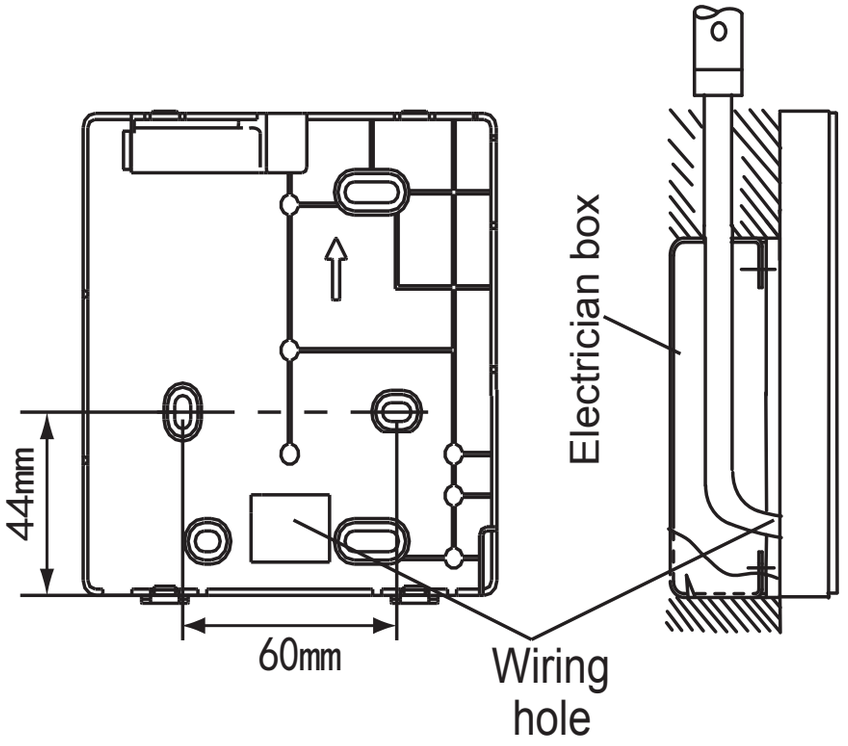
6) Over fasten the screw will lead to deforma tion of back cover.

4.3.4 Wire outlet

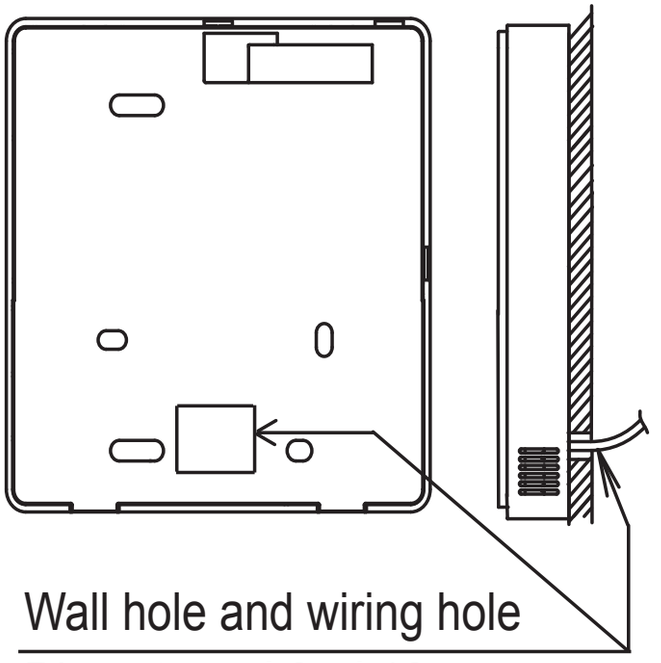


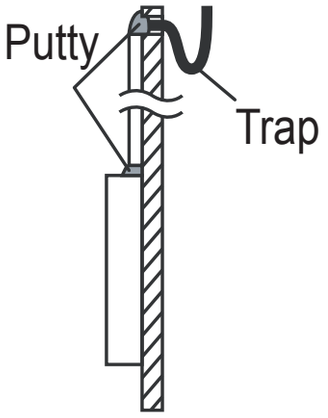


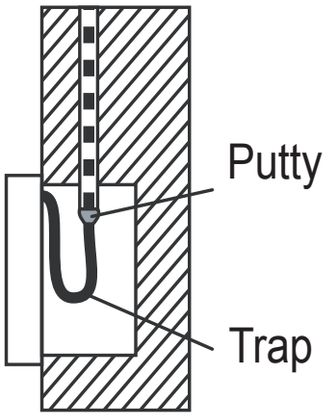
B

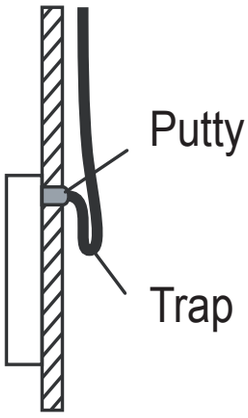


C





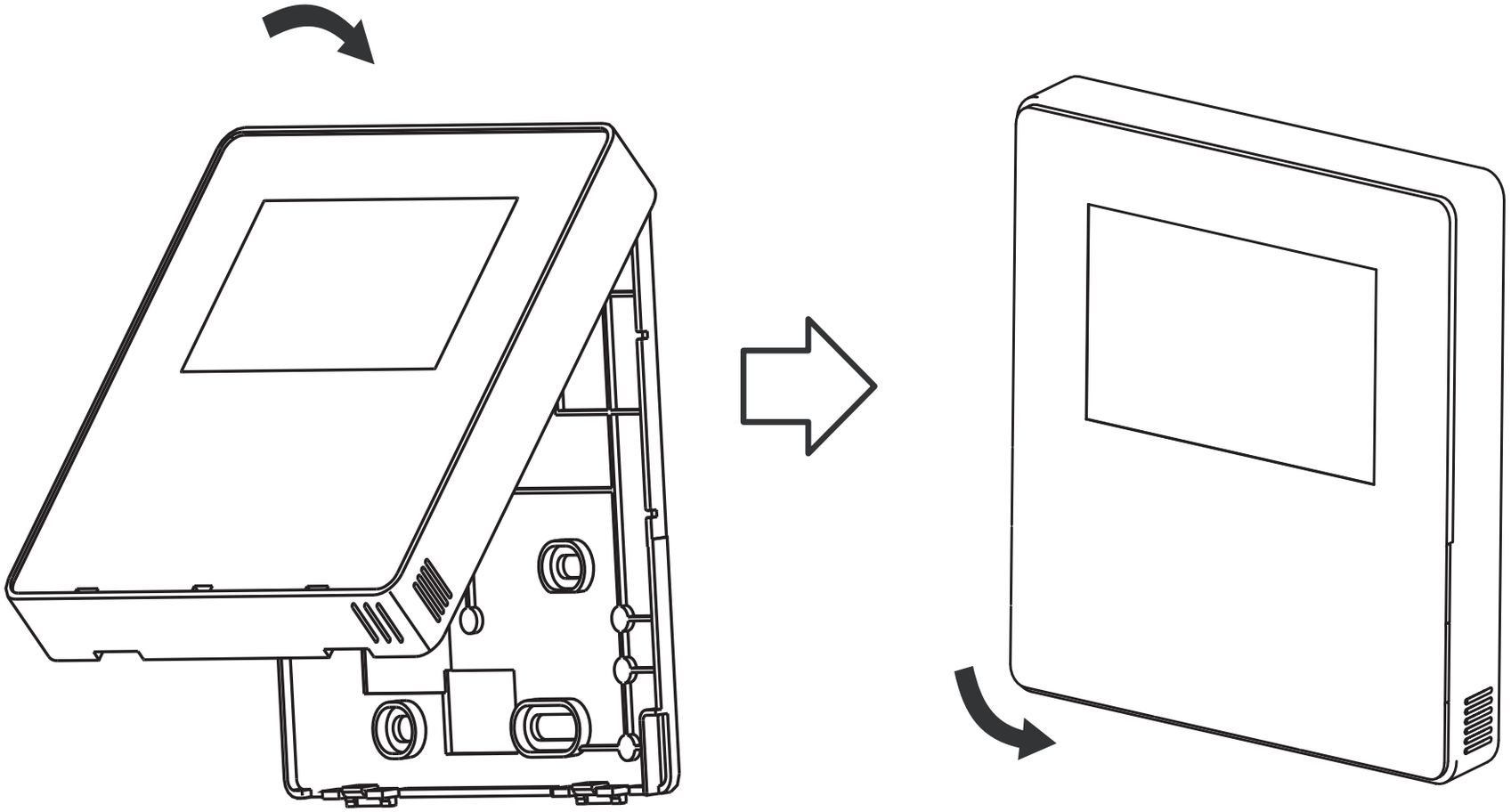




Avoid the water enter into the wired remote controller, use trap and putty to seal the connectors of wires during wiring installation.

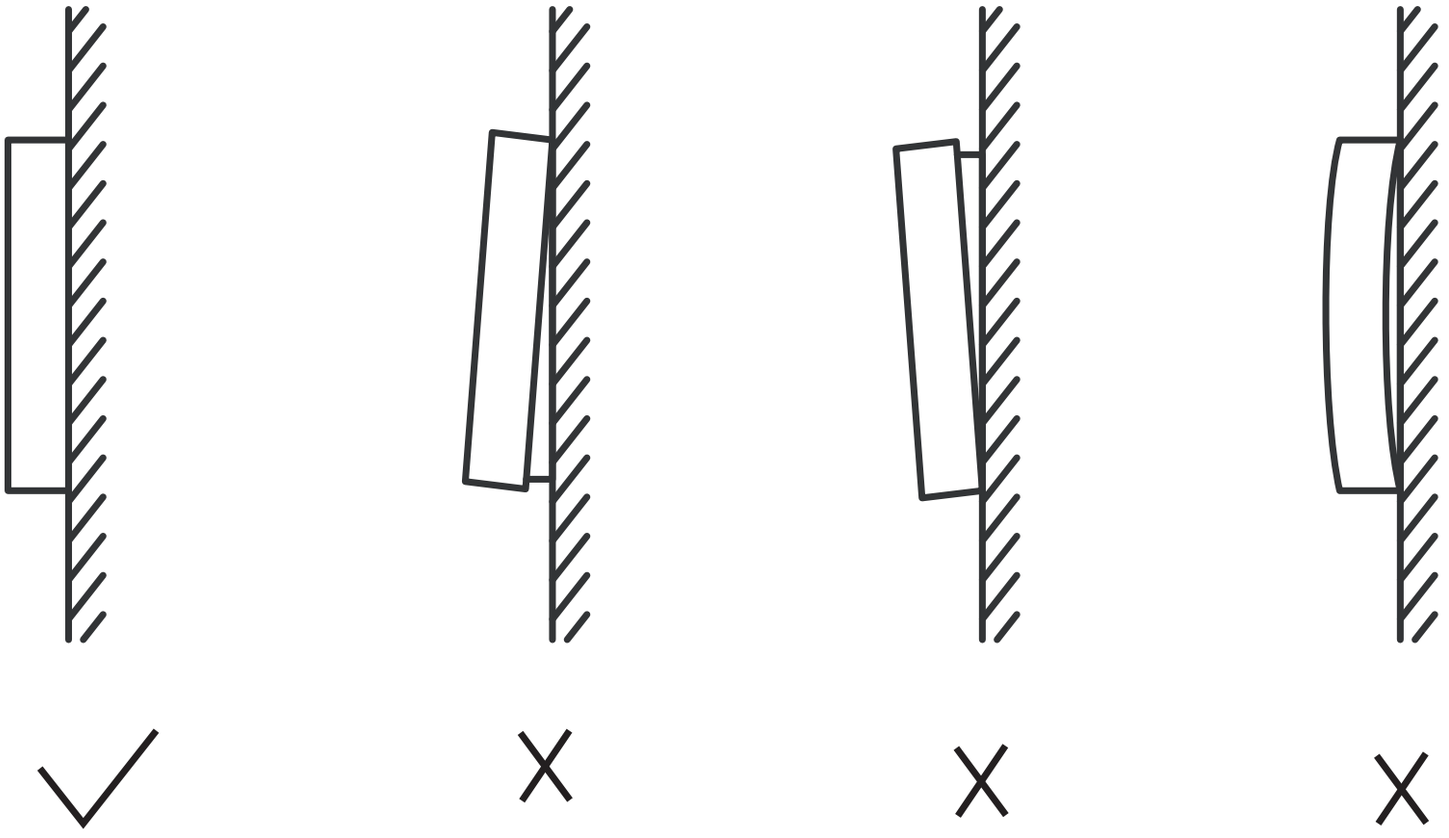
4.4 Front cover installation

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



Sensor can not be affected with damp.

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

5.1 Failure code of unit

NO.	Code	Content	Note
1	E0	Main control parameter memory EPROM failure	Recovered upon failure recovery
2	E1	Phase sequence failure of main control board check	Recovered upon failure recovery
3	E2	Communication failure between master and the HMI	Recovered upon failure recovery
		Communication failure between master and slave	Recovered upon failure recovery
4	E3	Total water outlet temperature sensor failure (main unit valid)	Recovered upon failure recovery
5	E4	Unit water outlet temperature sensor failure	Recovered upon failure recovery
6	E5	1E5 condenser tube temperature sensor T3A failure	Recovered upon failure recovery
	E6	Water tank temperature sensor T5 failure	Recovered upon failure recovery
8	E7	Ambient temperature sensor failure	Recovered upon error recovery
9	E8	Power supply phase sequence protector output error	Recovered upon error recovery
10	E9	Water flow detection failure	Occurs 3 times in 60 minutes and the error can be recovered by turning off the power supply only
12	Eb	1Eb--> Taf1 the pipe of the tank antifreeze protection sensor error	Recovered upon error recovery
		2Eb-->Taf2 cooling evaporator low-temperature antifreeze protection sensor failure	Recovered upon error recovery
13	EC	Slave unit module reduction	Recovered upon error recovery
14	Ed	1Ed-->A system discharge temperature sensor failure	Recovered upon error recovery
		2Ed-->B system discharge temperature sensor failure	Recovered upon error recovery
16	EF	Unit water return temperature sensor failure	Recovered upon error recovery
17	EH	System self-check failure alarm	Recovered upon error recovery
19	EP	Discharge temperature sensor failure alarm	Recovered upon error recovery
20	EU	Tz/7 Coil final outlet temperature sensor error	Recovered upon error recovery

NO.	Code	Content	Note
21	P0	System high-pressure protection or discharge temperature protection	Occurs 3 times in 60 minutes and the error can be recovered by turning off the power supply only
22	P1	System low pressure protection	Occurs 3 times in 60 minutes and the error can be recovered by turning off the power supply only
23	P2	Tz/7 Coil final outlet temperature too high	Recovered upon error recovery
24	P3	T4 ambient temperature too high in cooling mode	Recovered upon error recovery
25	P4	System A current protection	Occurs 3 times in 60 minutes and the error can be recovered by turning off the power supply only
26	P5	System B current protection	Occurs 3 times in 60 minutes and the error can be recovered by turning off the power supply only
27	P6	Inverter module failure	Recovered upon error recovery
28	P7	High temperature protection of system condenser	Occurs 3 times in 60 minutes and the error can be recovered by turning off the power supply only
30	P9	Water inlet and outlet temperature difference protection	Recovered upon error recovery
31	PA	Water inlet and outlet temperature difference anomaly protection	Recovered upon error recovery
32	Pb	Antifreeze protection in winter	Recovered upon error recovery
33	PC	Evaporator pressure too low in cooling	Recovered upon error recovery
35	PE	Cooling evaporator low temperature antifreeze protection	Recovered upon error recovery
37	PH	T4 ambient temperature too high in heatling mode	Recovered upon error recovery

No.	Code	Content	Note
38	PL	Inverter module temperature Tfin too high temperature protection	Occurs 3 times in 100 minutes and the error can be recovered by turning off the power supply only
40	xPU	DC fan module protection	x=1 means Fan A,x=2 means Fan B Recovered upon error recovery
46	H5	Voltage too high or too low	Recovered by power off
50	xH9	Compressor inverter module is not matched	x=1 means compressor A, x=2 means compressor B
55	xHE	Not insert electronic expansion valve error	x=1 means valve A, x=2 means valve B
61	xF0	IPM module communication failure	x=1 means system A, x=2 means system B
63	F2	Superheat insufficient	Recovered upon failure recovery
65	xF4	L0 or L1 protection occurs 3 times in 60 minutes	x=1 means system A, x=2 means system B
67	xF6	DC bus voltage error (PTC)	x=1 means system A, x=2 means system B
68	F7	Not insert electronic expansion valve	Recovered by power off
70	xF9	Inverter module temperature sensor error	x=1 means Tfin1, x=2 means Tfin2
72	Fb	Pressure sensor error	Recovered upon error recovery

No.	Code	Content	Note
74	Fd	Suction temperatrue sensor error	Recovered upon error recovery
76	xFF	DC fan failure	x=1 means fan A, x=2 means fan B Recovered by power off
79	FP	DIP inconsistency of multiple water pumps	Recovered by power off
88	C7	If PL occurs 3 times,the system reports the C7 failure	Recovered by power off
101	L0	Compressor inverter module protection	Recovered upon error recovery
102	L1	DC bus low voltage protection	Recovered upon error recovery
103	L2	DC bus high voltage protection	Recovered upon error recovery
105	L4	MCE error	Recovered upon error recovery
106	L5	Zero speed protection	Recovered upon error recovery
108	L7	Phase sequence lost protection	Recovered upon error recovery
109	L8	Compressor frequency change over 15Hz	Recovered upon error recovery
110	L9	Compressor frequency difference 15Hz	Recovered upon error recovery
146	dF	Defrosting prompt	Flash when entering the defrosting

Failure code is for reference here, please refer to the failure code of outdoor unit for details.

5.2 Failure code of wired controller

No.	Code	Content	Note
1	E2	Main control and wired control transmission error	Recovered upon error recovery
2	EC	Slave unit module reduction	Recovered upon error recovery

6 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 wired controller.

The Controller Select interface in the Project Menu can set Modbus communication Address from 1 to 64.

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.

6.2 Supported function codes and exception codes

Function code	Explain
03	Read Holding Registers Number of continuous read registers per pass ≤20
06	Write Single Register
16	Read/Write multiple registers Number of continuous read registers per pass ≤20

Exception code specification

Exception code	MODBUS name	Remarks
01	illegal function code	Function code not supported by wired controller
02	illegal data address	The address sent in query or setting is undefined in the wired 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 2:Heating mode 4. DHW mode 8:OFF DHW mode is available for single pump
Outlet water temp. set(Tws)	1	Cooling mode (0℃ ~20℃) Heating mode (25℃ ~55℃)
Second target temp. set	2	Setpoint cool_2 (0℃ ~20℃) Setpoint heat_2 (25℃ ~55℃)
Silent mode	100	1:Standard Mode 2:Silent Mode 7:Super Silent Mode
ModBus control switch	138	1:Enable 0:Disable

Note: 06,16 write register, if the value is written beyond the scope of the note, the exception code is returned.
If 138 address of ModBus control switch is not written as “1”, all but 138 addresses can not be written.

The following address can use 03 (read holding registers)		
Data	Address of Register	Notes
Running Mode	N*100+240	1:OFF 2:Cooling Mode 3:Heating Mode 4.DHW Mode
Current silent Mode	N*100+241	1:Standard Mode 2:Silent Mode 3:Super Silent Mode
In water temp	N*100+244	Units: ℃
Out water temp	N*100+245	Units: ℃
Total outlet water temp.	N*100+246	Units: ℃,only host 0 machine can read this parameter.
Ambient temp	N*100+247	Units: ℃
Compressor Speed	N*100+248	Units:Hz
Fan1Speed	N*100+250	Actual speed
Fan2Speed	N*100+251	Actual speed
Fan3Speed	N*100+252	Actual speed
WATER PUMP STATE	N*100+261	0: OFF 1: NO

The following address can use 03 (read holding registers)		
Data	Address of Register	Notes
SV1 STATE	N*100+262	0: OFF 1: NO
SV2 STATE	N*100+263	0: OFF 1: NO
HEAT1 STATE	N*100+264	0: OFF 1: NO
Error or protect	N*100+272	See “Failure Information and Code”
Last error or protect	N*100+273	See “Failure Information and Code”
wire control error	N*100+278	See “Failure Information and Code”
Defrost	N*100+282	0: OFF 1: NO
Anti-freezing electric heater	N*100+283	0: OFF 1: NO
Remote control state	N*100+284	0: OFF 1: NO (state of unit 0)

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

此页及后续页码不印刷
版本说明

材质：双胶纸100g黑白印(说明书)
规格：其他
长：100mm
宽：100mm
页数：52页
正大度：大度

修改记录表			
版本号	责任人	修改日期	主要修改内容
D	沈阳志	2019.1.23	1.统一R32 30/60内容，按功能规格书修订；多处。 2.增加ModBus内容。
E	沈阳志	2019.7.22	1. 更改 P44 2. 删除整页内容 P47 3. P11 YEAT 改为YEAR, P12 USET 改为USER 4.字体重叠勘误P20 5.字体替换 P13 P12
F	沈阳志	2019.11.12	并联电控后，在R32 30/60机型线控器基础上修改，使用于与R410 30/60并联。更改多处。
	冯雪映	2020.6.28	技术要求增加材质克重100g，内容不变，故不升级版本