



# ***Owner's Manual***

## **Original Instructions**

Thermostat WK-010WC1



KINGHOME PLUS



App Guide

Thank you for choosing this product. Please read this Owner's Manual carefully before operation and retain it for future reference.

# To Users

Thank you for selecting our product. Please read this instruction manual carefully before installing and using the product, so as to master and correctly use the product. In order to guide you to correctly install and use our product and achieve expected operating effect, we hereby instruct as below:

- (1) This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.
- (2) This instruction manual is a universal manual, some functions are only applicable to particular product. All the illustrations and information in the instruction manual are only for reference, and control interface should be subject to actual operation.
- (3) In order to make the product better, we will continuously conduct improvement and innovation. If there is adjustment in the product, please subject to actual product.
- (4) If the product needs to be installed, moved or maintained, please contact our designated dealer or local service center for professional support. Users should not disassemble or maintain the unit by themselves, otherwise it may cause relative damage, and our company will bear no responsibilities.



This marking indicates that this product should not be disposed with other household wastes throughout the EU. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, please use the return and collection systems or contact the retailer where the product was purchased. They can take this product for environmental safe recycling.

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## 1 Safety Notices (Please be sure to abide)



**WARNING:** If not abide them strictly, it may cause severe damage to the unit or the people.



**NOTE:** If not abide them strictly, it may cause slight or medium damage to the unit or the people.



This sign indicates that the items must be prohibited. Improper operation may cause severe damage or death to people.



This sign indicates that the items must be observed. Improper operation may cause damage to people or property.



**WARNING!**

This product can't be installed at corrosive, inflammable or explosive environment or the place with special requirements, such as kitchen. Otherwise, it will affect the normal operation or shorten the service life of the unit, or even cause fire hazard or serious injury. As for the above special places, please adopt special air conditioner with anti-corrosive or anti-explosion function.

## 2 Installation

**NOTE:** There may be slight differences between the illustrated thermostat and the actual product, which shall prevail.

## 2.1 Dimension and Components of Thermostat

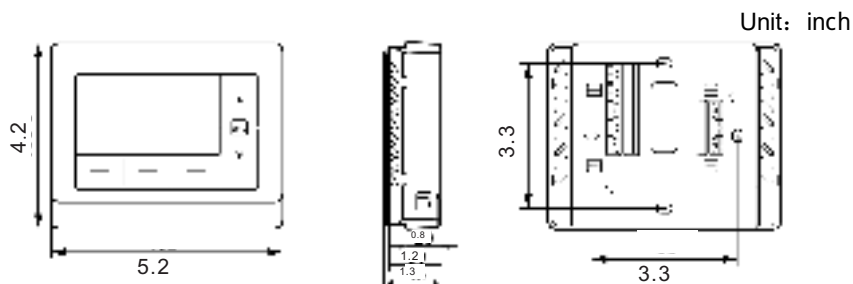


Figure 2-1 Dimension of Thermostat

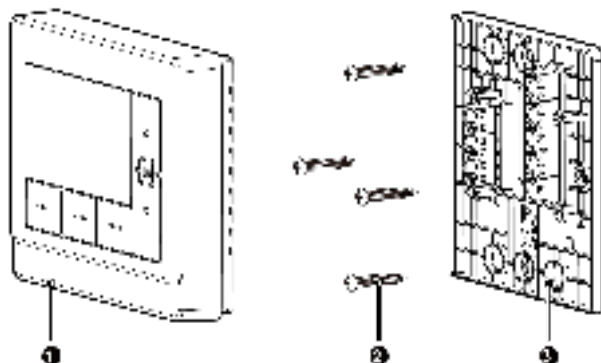


Figure 2-2 Components of Thermostat

Table 2.1.1 Introduction of Components

| No.      | ①          | ②                         | ③                           |
|----------|------------|---------------------------|-----------------------------|
| Name     | Thermostat | Tapping screw ST3.9×25 MA | Mounted plate of thermostat |
| Quantity | 1          | 4                         | 1                           |

## 2.2 Instruction of Thermostat Wiring Terminal

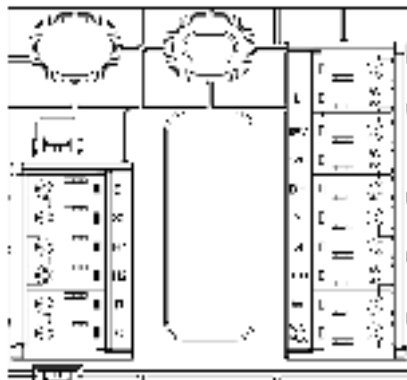


Figure 2-3 Wiring Terminal of Thermostat

Table 2.2.1 Instruction of Thermostat Wiring Terminal

| No. | Name | Instruction                                                    |
|-----|------|----------------------------------------------------------------|
| 1   | L    | Port of refrigerant detection abnormal signal sent by the unit |
| 2   | ERV  | Economizer or fresh air equipment signal port                  |
| 3   | O/B  | 4-way valve signal port                                        |
| 4   | DH   | Dehumidification mode signal port                              |

| No. | Name   | Instruction                                                                      |
|-----|--------|----------------------------------------------------------------------------------|
| 5   | Y      | Outdoor compressor gear                                                          |
| 6   | G      | Indoor fan                                                                       |
| 7   | HUM    | Humidification equipment signal port                                             |
| 8   | W      | Primary furnace equipment signal port                                            |
| 9   | W2/AUX | Secondary furnace equipment or electric heater signal port                       |
| 10  | C      | 24V Common wire                                                                  |
| 11  | R      | 24V Power supply                                                                 |
| 12  | H1/H2  | Communication signal port                                                        |
| 13  | S1/S2  | Extended temperature sensor interface for detecting outdoor ambient temperature. |

**NOTES:**

- (1) The current parameters of L, ERV, O/B, DH, Y, G, HUM, W, W2/AUX, C, R: rated current $\leq$ 1A, 24V~@60Hz;
- (2) Whether the four-way valve type of the unit is cooling energization or heating energization, it is connected to the O/B signal port, and O or B should be selected according to the four-way valve type at the system setting;
- (3) Other terminals are connected according to unit requirements.
- (4) Communication Wire Selection :

| Cord type                                             | Cord length<br>L(feet) | Cord size (mm <sup>2</sup> )        | Remark                                                        |
|-------------------------------------------------------|------------------------|-------------------------------------|---------------------------------------------------------------|
| Light/ordinary<br>PVC sheathed<br>twisted-copper cord | L $\leq$ 98.4          | 2 $\times$ 0.75~<br>2 $\times$ 1.25 | The total length of communication<br>cables can't exceed 30m. |

| Cord type                                                          | Cord length<br>L(feet) | Cord size (mm <sup>2</sup> ) | Remark                                                                                                                                             |
|--------------------------------------------------------------------|------------------------|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Shielded<br>light/ordinary PVC<br>sheathed twisted-<br>copper cord | L≤98.4                 | 2×0.75~<br>2×1.25            | When the installation environment<br>of the thermostat is in strong<br>magnetic or strong interference, it is<br>necessary to use a shielded cord. |

(5) Other wire size (mm<sup>2</sup> / AWG): 0.2~0.6mm<sup>2</sup> (AWG24~AWG20).

## 2.3 Installing Position and Requirements of Thermostat

- (1) Please do not install the thermostat in the position where is wet or is likely to be splashed with water;
- (2) Please do not install the thermostat near high-temperature objects or under direct sunlight;
- (3) Before installation, please cut off the power supply of strong current wire inside the wall, it is not allowed to install under electrified status;
- (4) The thermostat should only be installed indoors, and its working temperature range is 0°C~50°C.

## 2.4 Installation of Thermostat

For installation steps of thermostat please refer to the following sketch map, brief instructions are as below:

- (1) Before installation, please cut off the power supply, live working during installation is not allowed.
- (2) Pull out the control wire from the installation hole in the wall and let this wire go through the wiring hole behind the thermostat mounting plate.

- (3) Align the thermostat mounting plate at the installation holes and then use the self-tapping screw ST3.9×25 MA to fix the thermostat mounting plate with the installation holes on the wall.
- (4) Use a slot screwdriver to insert the wire protector pressing hole of wiring terminal, and then insert the control wire into the wiring hole of the wire terminal. Pull the tool out from the wire protector pressing hole and connect all control wires according to this way. Pay attention not to connect the heavy current.
- (5) Set the thermostat with the thermostat mounting plate together to complete the installation.

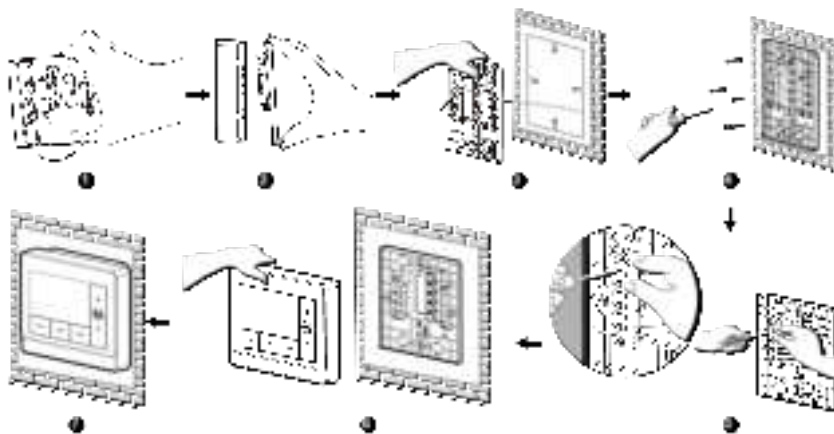


Figure 2-4 Sketch Map for Installation of Thermostat

## 2.5 Disassembly of Thermostat

Disassembly for thermostat is as below:

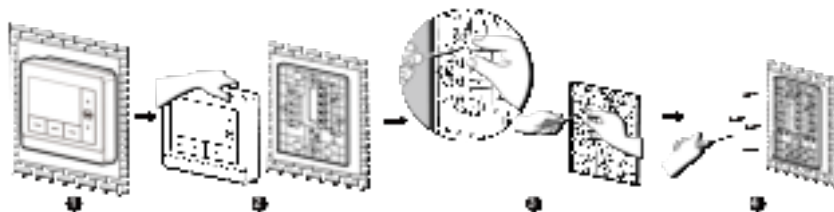


Figure 2-5 Sketch Map for Disassembly of Thermostat

## 3 Introduction to Display

### 3.1 Thermostat Homepage Display and Button Instruction

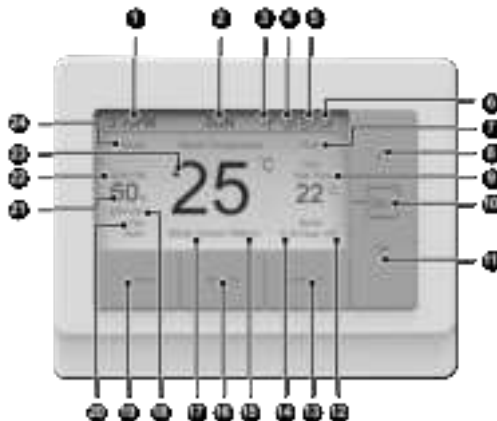


Figure 3-1 Thermostat Homepage Display and Button Instruction

**NOTE:** The contents in the display shown above will not exist at the same time. The figure shows all the displayed contents just to facilitate describing where they will be displayed.

Table 3.1.1 Thermostat Homepage Display and Button Instruction

| No. | Name                                                                              | Instruction                                                            |
|-----|-----------------------------------------------------------------------------------|------------------------------------------------------------------------|
| 1   | Time                                                                              | Display current time                                                   |
| 2   | Weekday                                                                           | Display current weekday                                                |
| 3   |  | WiFi Function (It displays only when the thermostat has WiFi function) |

| No. | Name                                                                              | Instruction                                                                                                                                                                         |
|-----|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4   |  | It is displayed to remind that the filter shall be cleaned.                                                                                                                         |
| 5   |  | It is displayed when the buttons are locked                                                                                                                                         |
| 6   |  | It is displayed when the battery is low                                                                                                                                             |
| 7   | Equipment in use                                                                  | It is displayed to remind which equipment is in use: Heat pump / Furnace                                                                                                            |
| 8   |  | For increasing temperature, time and other parameters.                                                                                                                              |
| 9   | Set temperature                                                                   | (1) Display the set temperature in the current mode.<br>(2) Keep the current set temperature and "Hold" will be displayed when the set temperature of the schedule is not executed. |
| 10  | Menu                                                                              | On the homepage, you can enter the Menu page by pressing this button. On other interface, you can return to the previous interface                                                  |
| 11  |  | For decreasing temperature, time and other parameters                                                                                                                               |
| 12  | ON                                                                                | Display when unit is running                                                                                                                                                        |
| 13  | Function button 3                                                                 | On the homepage, it is the Mode button. On other interface, the button function corresponds to the button name.                                                                     |
| 14  | Mode                                                                              | Display current operation mode                                                                                                                                                      |
| 15  | Schedule status                                                                   | Display the executed schedule period currently                                                                                                                                      |
| 16  | Function button 2                                                                 | On the homepage, it is the Schedule button. On other interface, the button function corresponds to the button name.                                                                 |
| 17  | Schedule status                                                                   | It is displayed when the schedule is enabled                                                                                                                                        |
| 18  | Economizer/fresh air equipment status                                             | It is displayed when the ERV function is enabled                                                                                                                                    |
| 19  | Function button 1                                                                 | On the homepage, it is the Fan button. On other interface, the button function corresponds to the button name                                                                       |

| No. | Name                            | Instruction                                                                                                                                                                                                                                             |
|-----|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 20  | Fan mode                        | Display the current fan mode                                                                                                                                                                                                                            |
| 21  | Indoor ambient humidity         | Display the relative ambient humidity that the thermostat is currently located                                                                                                                                                                          |
| 22  | Humidification equipment status | It is displayed when the Humidifier function is enabled                                                                                                                                                                                                 |
| 23  | Indoor ambient temperature      | Display the relative ambient temperature that the thermostat is currently located                                                                                                                                                                       |
| 24  | Dual Fuel intelligent heating   | After intelligent heating is turned on, energy saving heat sources can be predicted based on the external environment.<br>The word "smart" will be displayed after the function is turned on, but it will only take effect when the Heating is running. |

## 4 Operation Instructions

### NOTE:

When the thermostat receives multiple control instructions in a short time, one of them shall prevail.

### 4.1 Settings of Unit On/Off and Mode

Press the "Mode" button on the homepage to set shutdown and operation mode. The mode can be switched in the following sequence:

Table 4.1.1 Mode Switching Sequence

| ODU function setting | Mode switching sequence                                |
|----------------------|--------------------------------------------------------|
| AC                   | OFF→Cool→OFF→Dehum.→OFF→AUX Heat→OFF                   |
| HP                   | OFF→Cool→OFF→Dehum.→OFF→Heat→OFF→Auto→OFF→AUX Heat→OFF |

**NOTE:**

Please set the ODU function setting according to the ODU type. Please refer "Installer Setup" section for the settings.

## 4.2 Setting of Fan Mode

Press the "Fan" button on the homepage to switch the Fan mode in the following sequence:

| Unit control mode | Fan Mode switching sequence |
|-------------------|-----------------------------|
| 24V               | Auto→On→Auto                |
| RS485             | High→Medium→Low→Auto→High   |

- ◆ ON: The fan runs at some certain speed all the time.
- ◆ AUTO: Under 24V control mode, the fan will be turned on or off as the change of the set and ambient temperature; under RS485 control mode, the fan will be automatically adjusted according to the set temperature and ambient temperature status.
- ◆ High: Under RS485 control mode, it always runs at the highest fan speed of current static pressure.
- ◆ Medium: Under RS485 control mode, it always runs at medium fan speed of current static pressure.
- ◆ Low: Under RS485 control mode, it always runs at low fan speed of current static pressure.

**NOTE:**

- (1) Please set the Communication setting according to the Communication Type. Please refer "Installer Setup" section for the settings.
- (2) Under dehumidification mode, it operates at low fan speed.

## 4.3 Temperature Adjustment

Under Cool, Dehum, Heat, AUX heat or Auto Mode, press "  " or "  " button to increase or decrease the set temperature by 1°C (°F).

In each mode, the setting range of set temperature is as follows:

Table 4.3.1 Set Temperature Range

| Operation mode | Temperature range     | Remarks                                             |
|----------------|-----------------------|-----------------------------------------------------|
| Cool           | 10°C~32°C (50°F~90°F) | The lower limit can be set, range 10~30°C (50~86°F) |
| Dehum.         | 10°C~32°C (50°F~90°F) | The lower limit can be set, range 10~30°C (50~86°F) |
| Heat           | 10°C~32°C (50°F~90°F) | The upper limit can be set, range 16~32°C (61~90°F) |
| Auto           | 10°C~32°C (50°F~90°F) | —                                                   |
| AUX Heat       | 10°C~32°C (50°F~90°F) | The upper limit can be set, range 16~32°C (61~90°F) |

The lower limit of set temperature in Cool mode, Dehum mode and the upper limit of the set temperature in Heat mode and Aux Heat mode can be adjusted. Please refer "User Setup" section for the settings.

## 4.4 Schedule Function

The Schedule function is used to set specific time of the week to execute a specific mode.

Under unit off mode, hold on pressing "Function button 2" button to enter the setting selection page of timed mode, as shown in the picture below:

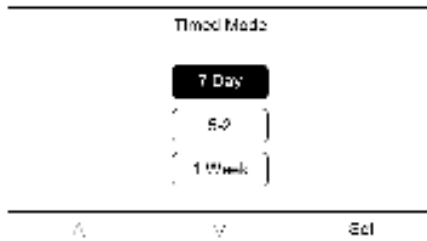


Figure 4-1 Setting Selection Page of Timed Mode

On the setting selection page of timed mode, press "^" or "V" button to select the timed mode. Instructions of timed mode are as follows:

Table 4.3.1 Instructions of Timed Mode

| Timed mode | Instructions                                                                                                          |
|------------|-----------------------------------------------------------------------------------------------------------------------|
| 7 Day      | Adjust program schedule parameters for each day of a week. It will be executed circularly every week after setting.   |
| 5-2        | Adjust program schedule parameters on weekdays and weekends. It will be executed circularly every week after setting. |
| 1 Week     | Adjust program schedule parameters for seven days of a week. It will be executed circularly every week after setting. |

Select the schedule timed mode that you want to set and press "Set" to enter the

underlying setting interface:

- (1) If "7 Day" mode is selected, press "Set" to enter the day selection interface. Press "<" or ">" button to select from Sunday to Saturday, and then press "Set" again to enter the schedule parameters setting page.
- (2) If "5-2" mode is selected, press "Set" to enter the day selection interface. Press "<" or ">" button to select "Workdays" or "Weekend", and then press "Set" again to enter the schedule parameters setting page.
- (3) If "1 Week" mode is selected, press "Set" to enter the schedule parameters setting page directly.

On the parameter setting page:

- (1) Press "<" or ">" button to select the parameters.
- (2) Press "▲" or "▼" button to adjust the parameters.
- (3) Press "Set" button to save the settings.

| Mon      |       |      |      |
|----------|-------|------|------|
| Schedule | Time  | Heat | Cool |
| Wake     | 08:00 | 70°F | 75°F |
| Leave    | 08:00 | 61°F | 62°F |
| Return   | 18:00 | 70°F | 75°F |
| Sleep    | 22:00 | 61°F | 79°F |
|          |       | >    | Set  |

Figure 4-2 Setting Page of Schedule Parameters

Under Cool, Heat or AUX Heat Mode, press "Function button 2" button to enable

or disable the schedule function.

If "Week Sched." is displayed on the homepage as shown in the following figure, it means that the schedule function is opening. If the schedule has been executed, the executed period name will be displayed as shown in the following figure.

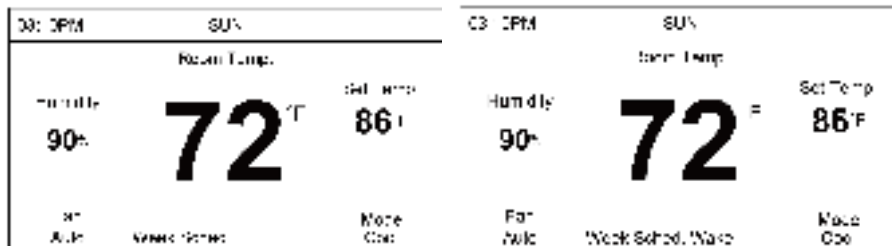


Figure 4-3 Schedule Running Status

After the schedule is enabled, if you press "▲" or "▼" button to adjust the set temperature, "Week Sched." will not be displayed and "Hold" will be displayed above the set temperature, indicating that the schedule function is still running, but the set temperature is not running according to the set parameter for the schedule being and the actual adjusted value will prevail. When the next schedule period is reached, "Hold" will be cleared and run again according to the parameters set by the schedule as shown below:

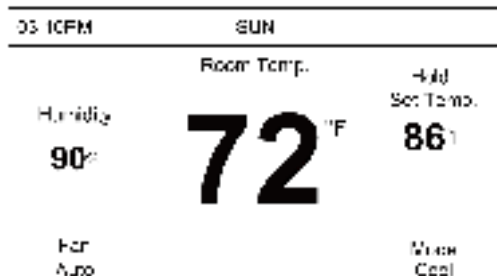


Figure 4-4 Hold Status of Schedule Running

If "Week Sched." is not displayed on the homepage and Hold is not displayed above the set temperature, it means the schedule function is off, as shown below:

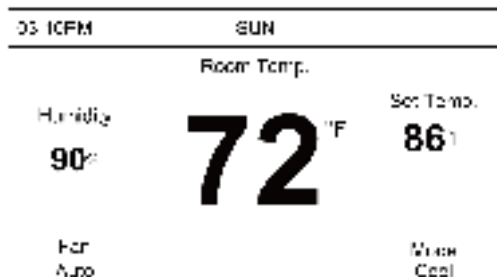


Figure 4-5 schedule Off Status

#### NOTES:

- (1) App's schedule and thermostat schedule are executed separately and they are valid according to the time sequence.
- (2) When any one of App's schedule or thermostat schedule is valid, schedule

status will be displayed. When any one of App's schedule or thermostat schedule is valid, change the set temperature and the thermostat will display the reminder of "Hold".

### 4.5 Child-lock Function

Press "  " and "  " buttons simultaneously for 5 seconds can enter into child-lock function, the liquid crystal screen will display " " and "  " buttons simultaneously again for 5 seconds can quit the child-lock function.

Under child-lock status, no response for pressing any buttons. The unit will memorize the child-lock status after power failure and re-energizing the unit.

### 4.6 WiFi Function Setting

"KINGHOME PLUS" App can be used to control thermostat. Please scan the QR code or search "KINGHOME PLUS" in the application market to download and install it. When "KINGHOME PLUS" App is installed, register the account and add the device to achieve long-distance control and LAN control of KINGHOME smart home appliances.

When using the App for the first time, please reset WiFi of thermostat at first (reset WiFi to ex-factory setting). For details about how to reset WiFi, see "5.2 User Parameter Settings". When the WiFi icon is flickering in 0.5 seconds to 0.5 seconds, it means that the reset is successful.

**NOTES:**

- (1) If the device is offline or router's name and password have been changed, please reset WiFi and add the device again.
- (2) WiFi networking performance is related to the distance between the thermostat and the router and the obstacles between them. During the installation process, the distance between the thermostat and the router should be as close as possible, and the obstacles should be as little as possible. If the WiFi signal is not good, use the WiFi signal enhanced router. The specific situation depends on the actual installation.
- (3) When the thermostat is powered by the battery, the WiFi function is unavailable and cannot control the unit through the App. When the thermostat is powered by the unit, the WiFi function can be used normally.

## 5 Parameter Settings

### 5.1 Menu Page

Press "Menu" button on the homepage to enter the Menu page, as shown below:



Figure 5-1 Menu Page

On the Menu page, press "^" or "v" button to move the cursor for selecting "User Function", "User Setup", "Installer Setup" or "Information Search", and then press "Set" button to enter the corresponding page. Press "Menu" button to return to the homepage.

### 5.2 User Function Settings

On the Setting page, press "^" or "v" button to move the cursor for selecting the parameter to be set, and press "Set" button to select the parameter to be set. Then press "▲" or "▼" button to select the parameter value, and then press "Set" to save the setting. Press "Menu" button to return to the Menu page. If there is no operation

within 20 seconds, it will return to the homepage automatically. The detailed user function list is as follows:

Table 5.2.1 User Parameter List

| No. | Parameter name     | Parameter range | Remarks                         |
|-----|--------------------|-----------------|---------------------------------|
| 1   | Dual Fuel Type     | Standard/Smart  | Dual Fuel function type setting |
| 2   | Humidifier         | ON/OFF          | Humidifier ON/OFF setting       |
| 3   | Humidity set value | 20~80%          | Target humidity value setting   |
| 4   | ERV                | ON/OFF          | Economizer setting              |

**NOTE:**

- (1) The Smart mode of Dual Fuel function requires WiFi connection.
- (2) The target humidity value can be set only when the humidifier function is ON.

## 5.3 User Setup

On the System page, press " $\wedge$ " or " $\vee$ " button to move the cursor for selecting the parameter to be set, and press "Set" button to select the parameter to be set. Then press " $\blacktriangle$ " or " $\blacktriangledown$ " button to select the parameter value, and then press "Set" to save the setting. Press "Menu" button to return to the Menu page. If there is no operation within 20 seconds, it will return to the homepage automatically. The detailed user parameter list is as follows:

When a certain parameter cannot be set, it will be displayed in gray. Under ON mode, all parameters cannot be set, but can be inquired.

Table 5.3.1 System Parameter List

| No. | Parameter name            | Parameter range                     | Remarks                                                                                                                                                                                                                                                                   |
|-----|---------------------------|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Clock Format              | 12H/24H                             | Set the clock format                                                                                                                                                                                                                                                      |
| 2   | Time and Date             | 2000-2099                           | Press "Set" button to enter the setting page of time and date.                                                                                                                                                                                                            |
| 3   | Daylight Saving Time      | ON/OFF                              | Set summer time/winter time                                                                                                                                                                                                                                               |
| 4   | Backlight                 | OFF/20S/Always ON                   | Set backlight<br><b>NOTE:</b> only applicable when the power is not supplied by battery. In using battery status, backlight defaults to OFF.                                                                                                                              |
| 5   | System Memory             | YES/NO                              | Set if the unit on/off status is memorized during power failure                                                                                                                                                                                                           |
| 6   | Temperature Unit          | °F/°C                               | Set the unit of temperature                                                                                                                                                                                                                                               |
| 7   | Filter Cleaning Reminder  | OFF/10Days/20Days/30Days/2~24Months | Set the filter cleaning reminder time                                                                                                                                                                                                                                     |
| 8   | Language                  | English/French                      | Set Language                                                                                                                                                                                                                                                              |
| 9   | Synchronize Time with App | YES/NO                              | <b>NOTE:</b> The thermostat can only be set when it is connected to WiFi.                                                                                                                                                                                                 |
| 10  | WiFi Reset                | YES/NO                              | Set WiFi reset<br><b>NOTE:</b> only applicable to models with WiFi function.                                                                                                                                                                                              |
| 11  | Min Cool Setpoint         | 50~86°F (10~30°C)                   | Set the lower limit for the set temperature in cooling                                                                                                                                                                                                                    |
| 12  | Max Heat Setpoint         | 61~90°F (16~32°C)                   | Set the upper limit for the set temperature in heating                                                                                                                                                                                                                    |
| 13  | Factory setting           | YES/NO                              | Restore default parameters<br><b>NOTE:</b> Only can be set under unit off mode. After the factory setting is restored, Fan Mode, Set Temperature, Timer Function Switch and the parameters in the User Setup list except "WiFi Reset" are restored to the default values. |

**NOTE:**

When the thermostat is connected to WiFi, and the parameter "Synchronize App time" is set to "YES", the time of the thermostat is finally synchronized to the App time.

## 5.4 Installer Setup

On the System page, press " $\wedge$ " or " $\vee$ " button to move the cursor for selecting the parameter to be set, and press "Set" button to select the parameter to be set. Then press " $\blacktriangle$ " or " $\blacktriangledown$ " button to select the parameter value, and then press "Set" to save the setting. Press "Menu" button to return to the Menu page. If there is no operation within 20 seconds, it will return to the homepage automatically.

When a certain parameter cannot be set, it will be displayed in gray. When you press " $\wedge$ " or " $\vee$ " button, it will automatically jump to the settable parameter line; Under ON mode, all parameters cannot be set, but can be inquired.

Table 5.4.1 Installation Parameters List

| No. | Parameter name | Parameter range | Remarks                                                                                                                                                                                                                                   |
|-----|----------------|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1   | Thermostat Set | Reserved        | Reserved.<br>This parameter is fixed to "Primary".                                                                                                                                                                                        |
| 2   | Communication  | 24V/RS485       | Set the unit control mode<br><b>NOTE:</b><br>(1) Only can be set under unit off mode;<br>(2) The factory default is 24V communication mode. If you need to change this setting, you need to consult the manufacturer's technical support. |

| No. | Parameter name              | Parameter range                                         | Remarks                                                                                                                                                                                                |
|-----|-----------------------------|---------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3   | Outdoor Unit Type           | AC/HP                                                   | Set the function of outdoor unit<br><b>NOTE:</b> Only can be set under unit off mode                                                                                                                   |
| 4   | Four-way Valve Reversing    | O/B                                                     | Set cooling/heating energization four-way valve<br><b>NOTE:</b> Only can be set under unit off mode                                                                                                    |
| 5   | Indoor Unit Type            | Air Handler/1 <sup>st</sup> Fur/<br>2 <sup>nd</sup> Fur | Set the function of indoor unit<br><b>NOTE:</b> Only can be set under unit off mode.                                                                                                                   |
| 6   | AUX On Timer                | 0~120min                                                | Set the starting time of electric heating in heating mode<br><b>NOTE:</b> Only can be set when the unit is under off mode and the outdoor unit type is set to HP.                                      |
| 7   | Max Activate Temp. for AUX  | 50~86°F (10~30°C)                                       | Set the upper limit of the starting temperature of the electric heating in heating mode<br><b>NOTE:</b> Only can be set when the unit is under off mode and the outdoor unit type is set to HP.        |
| 8   | AUX On Temp. Differential   | 0~10°F (0~5°C)                                          | Set the starting temperature difference of electric heating in heating mode<br><b>NOTE:</b> Only can be set when the unit is under off mode and the outdoor unit type is set to HP.                    |
| 9   | Satisfy Room Temp. With AUX | YES/NO                                                  | Set electric heating continue to operate before unit stops when reaching the temperature point<br><b>NOTE:</b> Only can be set when the unit is under off mode and the outdoor unit type is set to HP. |

| No. | Parameter name            | Parameter range        | Remarks                                                                                                                                                                                                                        |
|-----|---------------------------|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10  | DualFuel Switch ODU Temp. | -13~59°F<br>(-25~15°C) | Set Dual Fuel changeover outdoor temperature<br><b>NOTE:</b> Only can be set when the unit is under off mode and the outdoor unit type is set to HP and the indoor unit type is set to 1 <sup>st</sup> Fur/2 <sup>nd</sup> Fur |
| 11  | DualFuel Switch Timer     | 10~120min              | Set the time of Dual Fuel changeover furnace<br><b>NOTE:</b> Only can be set when the unit is under off mode and the outdoor unit type is set to HP and the indoor unit type is set to 1 <sup>st</sup> Fur/2 <sup>nd</sup> Fur |
| 12  | Furnace Min On Time       | 10~60min               | Set the minimum operation time of furnace<br><b>NOTE:</b> Only can be set when the unit is under off mode and the outdoor unit type is set to HP and the indoor unit type is set to 1 <sup>st</sup> Fur/2 <sup>nd</sup> Fur    |
| 13  | Temp. Display Set         | -6~6°F (-3~3°C)        | Sets the indoor ambient temperature compensation value                                                                                                                                                                         |
| 14  | Cool Swing                | 4~8°F (or 2~4°C)       | Set Cooling temperature difference under Auto Mode                                                                                                                                                                             |
| 15  | Heat Swing                | 4~8°F (or 2~4°C)       | Set Cooling temperature difference under Auto Mode                                                                                                                                                                             |
| 16  | Comp. Delay On            | 1~15min                | Set the delayed start time for the compressor<br><b>NOTE:</b> Only can be set under unit off mode.                                                                                                                             |
| 17  | MIN Comp. On              | 0~6min                 | Set the minimum operation time of compressor<br><b>NOTE:</b> Only can be set under unit off mode.                                                                                                                              |
| 18  | Fan Off Timer             | 0~10min                | Delayed shutdown time of indoor fan                                                                                                                                                                                            |

| No. | Parameter name  | Parameter range | Remarks                                                                                                                                                                                             |
|-----|-----------------|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 19  | Factory Setting | YES/NO          | Restore factory settings<br><b>NOTE:</b> Only can be set under unit off mode. After the factory setting is restored, the parameters in the Installer Setup list are restored to the default values. |

## 5.5 Search

In the inquiry interface, you can inquire the outdoor ambient temperature, product version, installer name, installer contact, historical errors, indoor parameters and outdoor parameters. Detailed information inquiry function and status are described as follows.

Table 5.5.1 Inquiry List

| No. | Parameter name       | Remarks                                                                                                                 |
|-----|----------------------|-------------------------------------------------------------------------------------------------------------------------|
| 1   | Outdoor Temperature  | Outdoor ambient temperature                                                                                             |
| 2   | Version              | Product version                                                                                                         |
| 3   | Installer Name       | Installer name, shall be set by KINGHOME PLUS App                                                                       |
| 4   | Installer TeleNumber | Installer contact, shall be set by KINGHOME PLUS App                                                                    |
| 5   | Error Search         | The latest 10 historical errors can be inquired                                                                         |
| 6   | Parameter Search     | This information can only be queried when the communication is set to RS485, and is only used by maintenance personnel. |

**NOTE:** When the S1/S2 interface is not connected to the outdoor ambient temperature sensor, the outdoor ambient temperature inquiry display is fixed to -100°C/-148°F.

## 6 Display of Errors

When error occurs in the system, indoor ambient temperature display area in liquid crystal panel will display error code, when multiple errors occur simultaneously, it will circularly display error code.

When error occurs, please turn off the unit and seek for professional personnel to maintain.

The following figure refers to the Indoor temperature or humidity sensor.

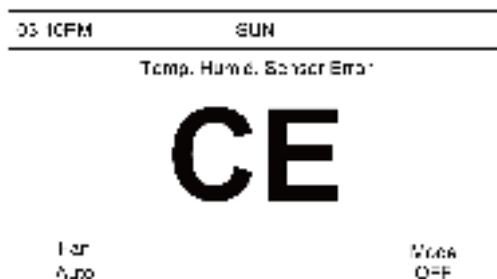


Figure 6-1 Indoor Temp. Humid. Sensor Error

Table 6.1 Error Code List

| Error Code | Error                                                           |
|------------|-----------------------------------------------------------------|
| EA         | Indoor unit refrigerant leakage protection                      |
| FE         | Refrigerant sensor error/refrigerant sensor communication error |
| CE         | Indoor temperature or humidity sensor error                     |
| F3         | Outdoor temperature sensor error                                |

| Error Code | Error                                            |
|------------|--------------------------------------------------|
| H1         | Indoor ambient temperature is too high           |
| L0         | Indoor ambient temperature is too low            |
| C0         | Communication error of thermostat                |
| E1         | Compressor high pressure protection              |
| E3         | Compressor low pressure protection               |
| E4         | Compressor discharge temperature protection      |
| H4         | Overload protection                              |
| C6         | Discharge temperature sensor error               |
| F3         | Outdoor ambient temperature sensor error         |
| e1         | High pressure sensor error                       |
| e3         | Low pressure sensor error                        |
| EE         | Main control memory chip error                   |
| C4         | Error of outdoor unit jumper cap                 |
| C3         | Outdoor pipe temperature sensor error            |
| C7         | Outdoor middle pipe temperature sensor error     |
| H3         | Compressor overload protection                   |
| E2         | Freeze prevention protection                     |
| b2         | Subcooler air inlet temperature sensor error     |
| b3         | Subcooler air outlet temperature sensor error    |
| E6         | Indoor unit and outdoor unit communication error |
| H2         | Low module temperature protection                |
| PL         | Low DC bus voltage                               |

| Error Code | Error                                                                            |
|------------|----------------------------------------------------------------------------------|
| PH         | High DC bus voltage                                                              |
| PA         | AC Current protection (input side)                                               |
| H5         | IPM abnormality                                                                  |
| L3         | DC fan error                                                                     |
| HC         | PFC abnormality                                                                  |
| Lc         | Startup failure                                                                  |
| U2         | Phase loss                                                                       |
| P0         | Drive module reset abnormality                                                   |
| P5         | Compressor overcurrent                                                           |
| LF         | Overspeed                                                                        |
| U1         | Current detecting circuit error or current sensor error                          |
| H7         | Non-synchronism                                                                  |
| LE         | Compressor stalling                                                              |
| P6         | Communication error between main control and drive                               |
| P8         | High temperature of radiating sheet or IPM module or PFC module                  |
| p7         | Abnormality of temperature sensor of radiating sheet or IPM module or PFC module |
| ee         | Error of drive memory chip                                                       |
| C8         | Abnormality of compressor DIP switch                                             |
| PU         | Charging circuit error                                                           |
| PP         | Abnormality of AC input voltage                                                  |
| PF         | Error of outdoor ambient temperature sensor on the drive board                   |

| Error Code | Error                                                                                                  |
|------------|--------------------------------------------------------------------------------------------------------|
| P9         | AC contactor protection                                                                                |
| PE         | Temperature drift protection                                                                           |
| Pd         | Sensor connection protection (current sensor is not connected to the corresponding U phase or V phase) |
| A1         | Inverter outdoor fan drive IPM module protection                                                       |
| AC         | Inverter outdoor fan startup failure                                                                   |
| UL         | Inverter outdoor fan overcurrent protection                                                            |
| AE         | Inverter outdoor fan drive current detecting circuit error                                             |
| AJ         | Inverter outdoor fan out-of-step protection                                                            |
| Ab         | Outdoor fan drive reset protection                                                                     |
| A6         | Outdoor fan drive communication error                                                                  |
| A8         | High outdoor fan module temperature                                                                    |
| A9         | Outdoor fan drive sensor error                                                                         |
| Ad         | Outdoor fan phase loss protection                                                                      |
| AH         | High voltage of outdoor fan bus                                                                        |
| AL         | Low voltage of outdoor fan bus                                                                         |
| EH         | Auxiliary electric heating misuse protection                                                           |
| C1         | Indoor ambient temperature sensor error                                                                |
| C2         | Indoor pipe temperature sensor error                                                                   |
| FJ         | Indoor air outlet temperature sensor error                                                             |
| CA         | Evaporator inlet pipe temperature sensor error                                                         |
| Cb         | Evaporator outlet pipe temperature sensor error                                                        |

| Error Code | Error                        |
|------------|------------------------------|
| CJ         | Indoor unit jumper cap error |
| E0         | Indoor fan error             |

**NOTE:** In the event of an EA/FE fault, the thermostat lights up the backlight and gives a buzzer alarm. The user can cancel the backlight and buzzer alarm by pressing the "Mode" button on the homepage, but the code display can only be canceled after the fault is eliminated.

## 7 Operation Instructions and Notices of Batteries

### 7.1 Installation of Batteries

Install two AA dry batteries (1.5V) according to the following figure.

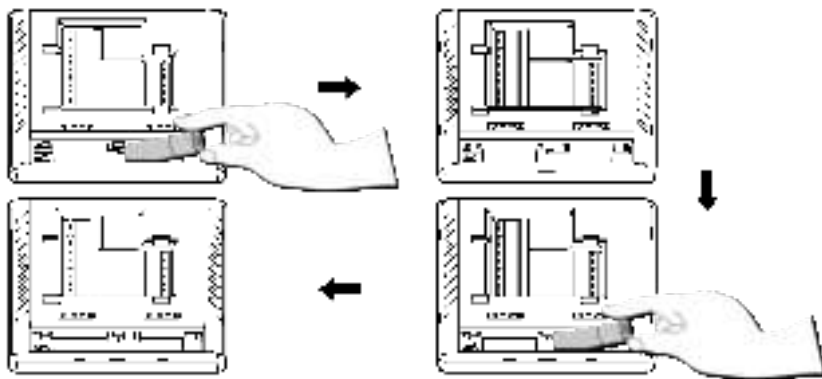


Figure 7-1 Installation of Batteries

## 7.2 Replacement of Batteries

Replace the batteries when the low power icon is displayed.

If only the batteries are used to supply power to the thermostat:

- (1) To ensure that the batteries work longer, if there is no operation within 10s, the display screen will temporarily extinguish. Please press the "Function button 2" to wake up the screen before operation again, then the thermostat can work normally.
- (2) The batteries only guarantee normal display. In this case, WiFi does not work and the unit cannot be controlled and the display screen backlight does not light up.

## 8 Selection of Extended Temperature Sensor

The precision of temperature sensor shall be  $\pm 1^{\circ}\text{C}$ . Before use, measure the resistance at both ends of the temperature sensor with ohmmeter and check if the temperature sensor is in good condition by referring to the following table.

| Outdoor ambient temperature |                    | Resistance (K $\Omega$ ) |
|-----------------------------|--------------------|--------------------------|
| $^{\circ}\text{C}$          | $^{\circ}\text{F}$ |                          |
| -30                         | -22                | 271.35                   |
| -29                         | -20.2              | 256.1833                 |
| -28                         | -18.4              | 242.5425                 |
| -27                         | -16.6              | 226.3552                 |
| -26                         | -14.8              | 212.0824                 |

| Outdoor ambient temperature |                    | Resistance (K $\Omega$ ) |
|-----------------------------|--------------------|--------------------------|
| $^{\circ}\text{C}$          | $^{\circ}\text{F}$ |                          |
| 11                          | 51.8               | 28.55709                 |
| 12                          | 53.6               | 27.2395                  |
| 13                          | 55.4               | 25.99929                 |
| 14                          | 57.2               | 24.72681                 |
| 15                          | 59                 | 23.62784                 |

| Outdoor ambient temperature |       | Resistance (K $\Omega$ ) |
|-----------------------------|-------|--------------------------|
| °C                          | °F    |                          |
| -25                         | -13   | 199.4034                 |
| -24                         | -11.2 | 188.0654                 |
| -23                         | -9.4  | 177.8663                 |
| -22                         | -7.6  | 166.4731                 |
| -21                         | -5.8  | 158.2839                 |
| -20                         | -4    | 149.0313                 |
| -19                         | -2.2  | 136.1206                 |
| -18                         | -0.4  | 129.0351                 |
| -17                         | 1.4   | 122.5843                 |
| -16                         | 3.2   | 115.5671                 |
| -15                         | 5     | 109.231                  |
| -14                         | 6.8   | 103.4814                 |
| -13                         | 8.6   | 97.41164                 |
| -12                         | 10.4  | 92.68319                 |
| -11                         | 12.2  | 87.64591                 |
| -10                         | 14    | 83.05884                 |
| -9                          | 15.8  | 78.86421                 |
| -8                          | 17.6  | 74.48929                 |
| -7                          | 19.4  | 70.50403                 |
| -6                          | 21.2  | 66.8586                  |
| -5                          | 23    | 63.51129                 |
| -4                          | 24.8  | 60.42698                 |
| -3                          | 26.6  | 57.23454                 |

| Outdoor ambient temperature |       | Resistance (K $\Omega$ ) |
|-----------------------------|-------|--------------------------|
| °C                          | °F    |                          |
| 16                          | 60.8  | 22.58804                 |
| 17                          | 62.6  | 21.51573                 |
| 18                          | 64.4  | 20.50291                 |
| 19                          | 66.2  | 19.62262                 |
| 20                          | 68    | 18.71078                 |
| 21                          | 69.8  | 17.91612                 |
| 22                          | 71.6  | 17.15807                 |
| 23                          | 73.4  | 16.36994                 |
| 24                          | 75.2  | 15.68069                 |
| 25                          | 77    | 14.96251                 |
| 26                          | 78.8  | 14.33309                 |
| 27                          | 80.6  | 13.78341                 |
| 28                          | 82.4  | 13.1504                  |
| 29                          | 84.2  | 12.5941                  |
| 30                          | 86    | 12.10713                 |
| 31                          | 87.8  | 11.59093                 |
| 32                          | 89.6  | 11.09402                 |
| 33                          | 91.4  | 10.65813                 |
| 34                          | 93.2  | 10.19517                 |
| 35                          | 95    | 9.788561                 |
| 36                          | 96.8  | 9.394867                 |
| 37                          | 98.6  | 9.013483                 |
| 38                          | 100.4 | 8.643841                 |

| Outdoor ambient temperature |      | Resistance (KΩ) |
|-----------------------------|------|-----------------|
| °C                          | °F   |                 |
| -2                          | 28.4 | 54.30137        |
| -1                          | 30.2 | 51.59711        |
| 0                           | 32   | 49.09597        |
| 1                           | 33.8 | 46.7759         |
| 2                           | 35.6 | 44.38742        |
| 3                           | 37.4 | 42.17675        |
| 4                           | 39.2 | 40.12476        |
| 5                           | 41   | 38.21496        |
| 6                           | 42.8 | 36.43305        |
| 7                           | 44.6 | 34.60589        |
| 8                           | 46.4 | 33.05396        |
| 9                           | 48.2 | 31.45527        |
| 10                          | 50   | 29.95952        |

| Outdoor ambient temperature |       | Resistance (KΩ) |
|-----------------------------|-------|-----------------|
| °C                          | °F    |                 |
| 39                          | 102.2 | 8.320759        |
| 40                          | 104   | 7.971981        |
| 41                          | 105.8 | 7.666881        |
| 42                          | 107.6 | 7.36978         |
| 43                          | 109.4 | 7.080366        |
| 44                          | 111.2 | 6.798345        |
| 45                          | 113   | 6.55364         |
| 46                          | 114.8 | 6.284832        |
| 47                          | 116.6 | 6.051459        |
| 48                          | 118.4 | 5.823147        |
| 49                          | 120.2 | 5.599735        |
| 50                          | 122   | 5.381066        |
| —                           | —     | —               |

## 9 Fcc Statement

This product contains FCC ID: 2ADAP-GRJWB05J10 and IC: 12478A-GRJWB05J10 CAN ICES-003(B)/NMB-003(B).

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for

compliance could void the user's authority to operate the equipment.

**NOTE:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

- Consult the dealer or an experienced radio/TV technician for help.



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