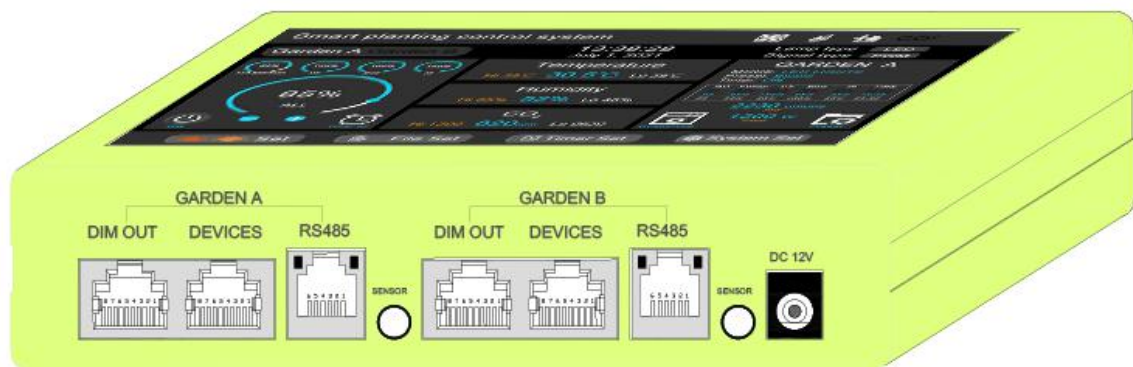# Agricultural planting intelligent controller

# Product Operation Manual

## Suitable for 5 inches standard

Jerry 43

Model : XRM0G4B03

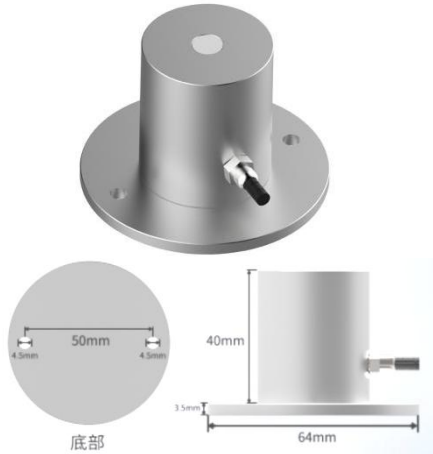| Customer | | Model No | | Item No | |
|---|---|---|---|---|---|
| Cust No | | Revision | RVE:02 | Date | 2022-6-15 |

| REVISION VONTROL RECORD | | | |
|---|---|---|---|
| Date | Revision | Change Description | Apprved |
| 2022-6-15 | RVE02 | new release | XINXING |
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Parts List：

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| Manual*1 |  |
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| Temperature, Humidity, CO2, 3-in-1<br>Sensor*1<br>（Optional, need to buy separately） |  |

# Connection diagram
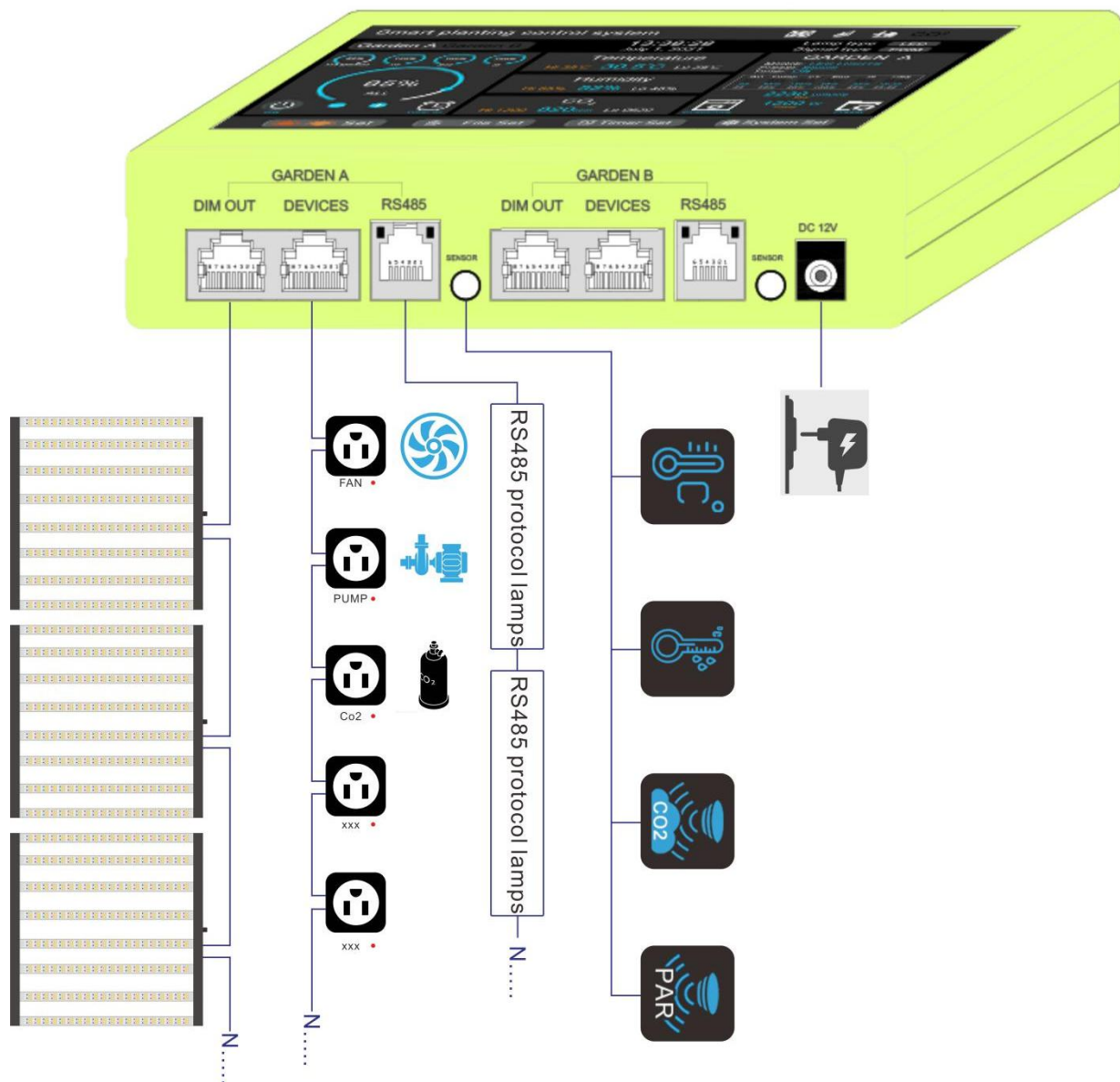


Note:

1. The sensors in the picture are optional, not standard;

2. Only one output signal mode can be selected in the same area (for example, if RS485 is selected, only the RS485 interface has signal output;

**Operating Instructions：**



**Main interface**

The product is divided into garden A and garden B, each corresponding to 4 channels, which can be switched; the selected state is white, and the unselected state is black;
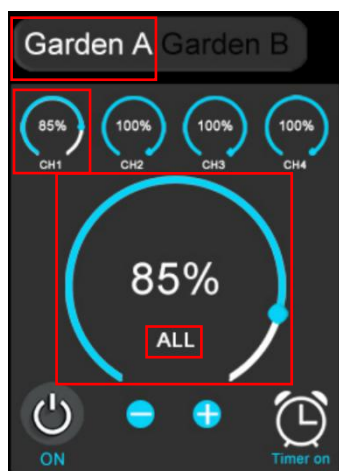


Currently, garden A is selected, CH1-CH4 correspond to the rings of 4 channels, and the brightness can be customized;

Example:

To adjust the brightness of CH1, click the  icon to flash, at this time, the name of the channel being adjusted "CH1" will be displayed in the position of the large circle "ALL". After adjustment, you can click the next channel to continue the adjustment or click "OK" in the upper right corner to complete the setting (If there is no operation after 5S, the icon stops flashing to indicate that the setting is completed); when no channel is selected, adjust the big circle to adjust the brightness of the whole lamp;

After automatically exiting the selection, the big circle displays "ALL". At this time, adjust all the

channels that are currently open (for example: if the brightness of CH1 channel is set to 80%, and the brightness of the main interface is adjusted to 80%, then the actual output PWM of this channel is 64%, and the display remains unchanged. );

Each channel is 0-100% adjustable and can only be adjusted after selection

When not selected, it will display as "ALL" to adjust the total power

**Control description:**

"ALL" is the total power adjustment

The remaining 4 channels are related to the brightness and total power set by a single channel

Example 1: The current "ALL" total brightness is 100%

        CH1 is set to 80%, the actual output PWM is 80%

        CH2 is set to 100%, the actual output PWM is 100%

        CH3 is set to 100%, the actual output PWM is 100%

        CH4 is set to 60%, the actual output PWM is 60%

Example 2: The current "ALL" total brightness is 90%

        CH1 is set to 80%, the display remains unchanged, the actual output PWM is 72%
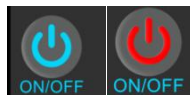
        CH2 is set to 100%, the display remains unchanged, the actual output PWM is 90%

        CH3 is set to 100%, the display remains unchanged, the actual output PWM is 90%

        CH4 is set to 60%, the display remains unchanged, the actual output PWM is 54%



Click "+" and "-" to adjust the brightness, click once to step by 1%, and long press to adjust continuously;
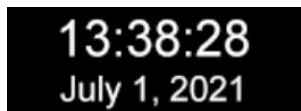


Click to turn on (blue) or turn off (red) the output of the PWM signal and control signal, and the screen remains on;
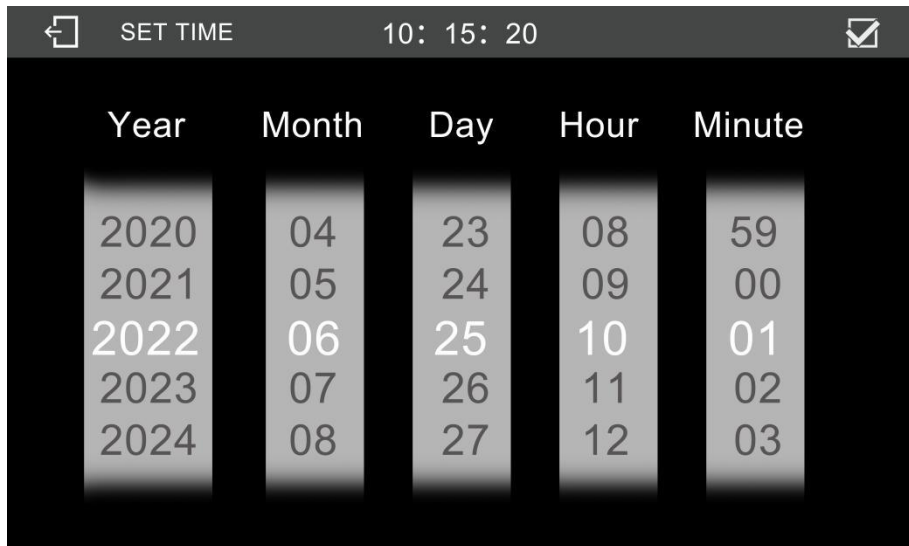
**Timer:**



White is on, indicating that the timing function is on; black means the timing function is off, and all the timings set in this area are not executed at this time;

**System time and date settings：**

13:38:28
July 1, 2021

Long press the time display area 3 seconds to pop up the setting interface

| SET TIME | 10：15：20 | ☑ |
|---|---|---|

| Year | Month | Day | Hour | Minute |
|------|-------|-----|------|--------|
| 2020 | 04 | 23 | 08 | 59 |
| 2021 | 05 | 24 | 09 | 00 |
| 2022 | 06 | 25 | 10 | 01 |
| 2023 | 07 | 26 | 11 | 02 |
| 2024 | 08 | 27 | 12 | 03 |

Swipe up and down to select the desired value, click on the upper right corner to confirm ☑ and

exit after setting;If you do not need to save, click the upper left corner to exit ⤶ ;

**Device control parameter settings:**
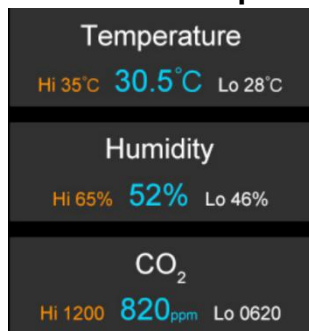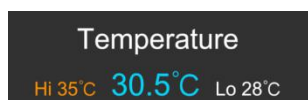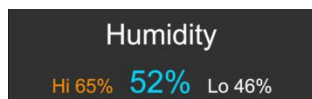


**01、Temperature：**



Press and hold the orange area to enter the upper temperature limit (the maximum limit is 99°C, and the limit cannot be lower than the lower limit) setting. When the set value is reached, the fan

will be turned on, and the icon in the status bar corresponds  to white;

Blue is the temperature display obtained by the sensor in real time;

Press and hold the white area to enter the temperature lower limit (the lowest limit is 0°C, and the limit cannot be higher than the upper limit) setting. When the set value is reached, the fan will be turned off, and the icon in the status bar corresponds to the fan icon is black;
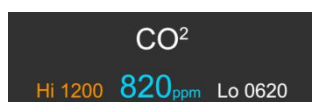
**02、Humidity：**



Press and hold the orange area to enter the humidity upper limit (the maximum limit is 100%, and the limit cannot be lower than the lower limit) setting. When the set value is reached, the control

interface 02 (high level) will be opened and the status bar icon will be white  (can be

connected to dehumidification equipment, etc.) ;Blue is the humidity display acquired by the sensor in real time;

Press and hold the white area to enter the humidity lower limit (the minimum limit is 10%, and the limit cannot be higher than the upper limit) setting. When the set value is reached, the control

interface 02 (low level) status bar icon will turn black  ;

**03、CO2 concentration:**



Press and hold the orange area to enter the upper limit of carbon dioxide concentration (the maximum limit is 2000ppm, and the limit cannot be lower than the lower limit) setting. When the set value is reached, the control interface (CO2 generator or carbon canister) will be opened and the

status bar icon will be white $CO^2$ ;

Blue is the display of carbon dioxide concentration obtained by the sensor in real time; long press the white area to enter the lower limit of carbon dioxide concentration (the minimum limit is 100ppm, and the limit cannot be higher than the upper limit) setting, the control device will be turned off when the set value is reached, and the icon in the status bar is black $CO^2$ ;

There are associated mode and independent mode for temperature, humidity and carbon dioxide. The system defaults to associated mode, which automatically controls the opening or closing of the interface according to the set value combined with the real-time collected data;

The independent mode is turned on and off according to the timing; (the independent mode is set in the system settings) When entering the independent mode, the main interface cannot set the parameters of these three items;
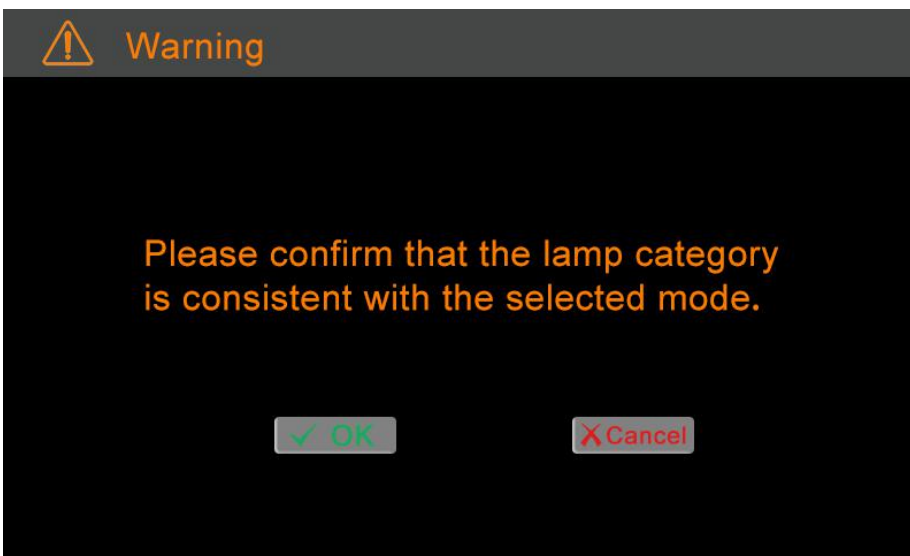
**Lamp type settings:**



The system defaults to LED mode, click the red box area, the selection bar will pop up



It can be switched for 4 kinds of lamps. When switching the type of lamps, the system will pop up a window prompting:
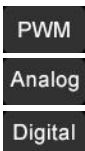


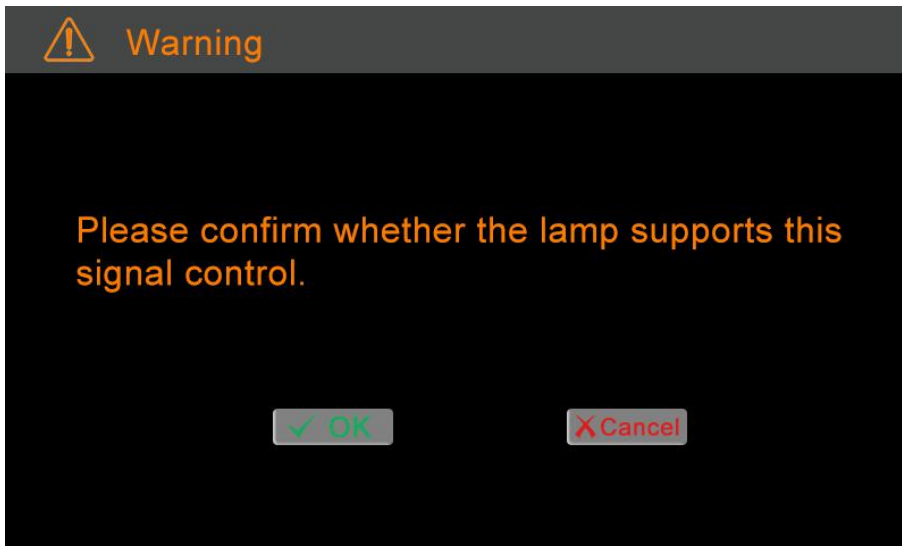Click OK to switch to a new mode, click Cancel to exit without switching;
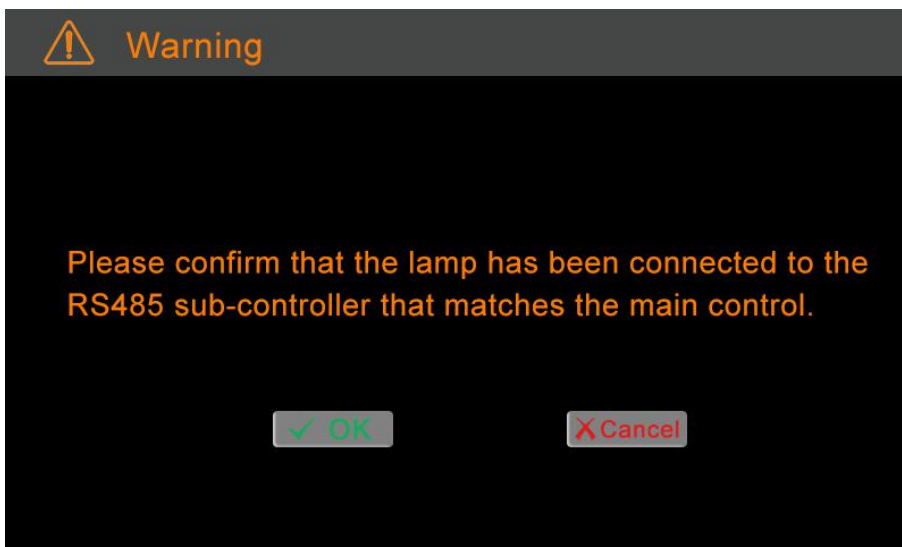
**Signal type settings:**



The system defaults to PWM mode, click the red box area, the selection bar will pop up



Support three signal mode output, click the corresponding signal will pop up a prompt window
When switching to PWM or Analog, the prompt is as follows:

⚠ Warning

Please confirm whether the lamp supports this signal control.

✓ OK    ✗ Cancel

When switching to Digital, the prompt is as follows:

⚠ Warning

Please confirm that the lamp has been connected to the RS485 sub-controller that matches the main control.

✓ OK    ✗ Cancel

Click OK to switch to a new mode, click Cancel to exit without switching;

**Signal type and lamp typeAssociation description：**

The corresponding contents are shown as follows:

| Lamp type | OFF | Signal type | | | Signal type | | | Remark |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | | Analog | PWM | digital | Analog | PWM | digital | |
| | | Low | | | Maximum value | | | |
| LED | OFF | 1V | 10% | 10% | 10V | 100% | 100% | |
| HPS | OFF | 5V | 50% | 50% | 11V | 100% | 100% | |
| CMH | OFF | 5V | 50% | 50% | 10V | 100% | 100% | |
| MH | OFF | OFF-0V | 0 | 0 | ON-10V | 100% | 100% | |

LED type: output PWM is 0%-100% (amplitude is 10V), brightness can be set arbitrarily from 0-100%

HPS type: The output PWM is 50%-100% (amplitude is 11V), and the minimum value of the ring for adjusting brightness cannot be lowered further at 50%, and can only be swiped between 50%-100%; that is to say, the selected The brightness of the timer in HPS mode can only be at least 50%

CMH type: The output PWM is 50%-100% (the amplitude is 10V), and the minimum value of the ring to adjust the brightness should be set at 50% and cannot be lowered any further, and can only be swiped between 50%-100%; that is to say When the CMH mode is selected, the brightness in the timer can only be at least 50% and the maximum can be 100%

MH type: The output PWM is 0% or 100% (the amplitude is 10V), and there are only two states, either 0 or 100; that is to say, when the MH mode is selected, the brightness in the timing is only a minimum of 0% and a maximum of 100%.

PWM output ratio:
1%=PWM 10% 30%=PWM30% remaining 20% divided by 29=0.689
5%=PWM 12.75 10%=PWM 16.20%
15%=PWM 19.65 20%=PWM 23.10%
25%=PWM 26.55% 30%=PWM 30%
31%-100% one-to-one correspondence

**Status display bar:**



GARDEN A ————→ Current garden A
————————————→ Current fixture mode
MODE: LED LIGHTS ————→ Current running mode
Preset: Bloom
Timer: ON ————————→ Timer function on

————————————→ Timer that has been executed
————————————→ timer in progress
————————————→ Unexecuted timer

2230 μmol/m²/s ————→ Current PPFD value（A photosynthetic quantum sensor is required）

1200 w ————————→ Whole lamp power (manual input, not actual collection)

————————————→ Preset Mode (white when checked, black when unchecked)

————————————→ Custom Mode (white for checked, black for unchecked)

Custom Mode  (white for checked, black for unchecked)，There is a pop-up prompt when switching, as follows:
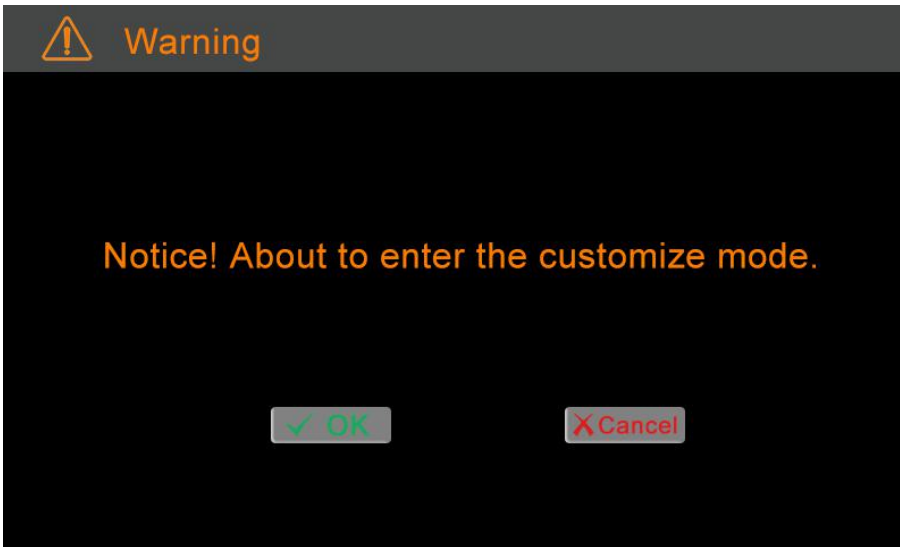


Click OK to switch to a new mode, click Cancel to exit without switching;

In this mode, the user can arbitrarily adjust the light, any timing, and control the equipment as needed;

Preset Mode  (white when checked, black when unchecked)

There is a pop-up prompt when switching, as follows:
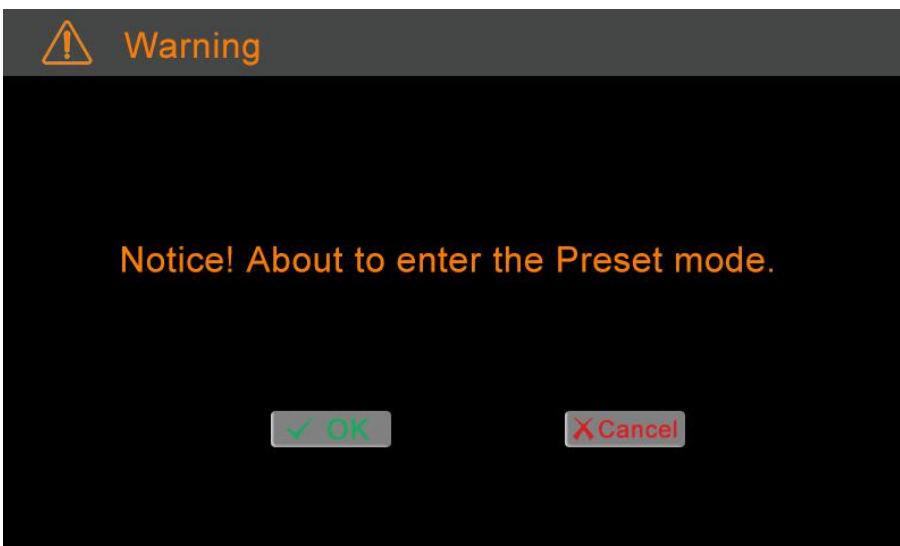


Click OK to switch to a new mode, click Cancel to exit without switching;

In the preset mode, the preset file is called for execution. During the running process, the parameters cannot be adjusted or modified. All running parameters are set in the preset file (see the file preset description), which can be directly called every time it is needed; ( Such as: VEG, SEEDING, BLOOM, FRUIT and other common stages)

**Simulate sunrise and sunset function：**

 Click on the bottom icon to enter the setting interface
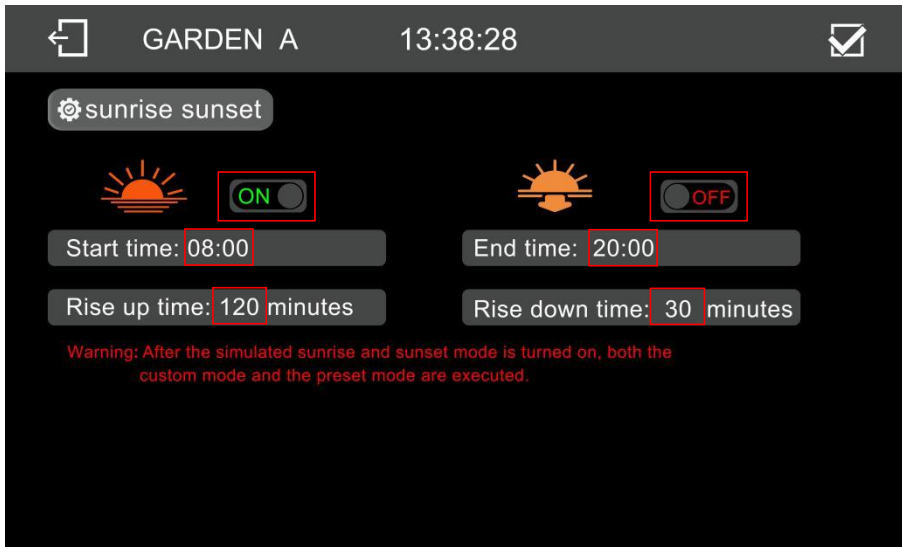


"ON" means enabled "OFF" means not enabled

Click the time setting area in the red box, the numeric keyboard will pop up, enter the value to confirm;



Set the simulated sunrise and sunset time, the time format is 24-hour format, (rise and fall, minimum 1 minute and maximum 120 minutes), here is set to associate all dimming modes;

The start time of the brightness rise of the lamp, according to the set rise up time, it will evenly rise to the set brightness (for example, set the start time to 8:00)
If the rise up time is 60 minutes, it will evenly rise to the set brightness value within 60 minutes from 8:00, that is, from 9:00 to the set brightness value;)

The end time of the brightness decline of the lamp, according to the set rise down time, it will drop evenly until the lamp is turned off (for example, set the start time to 20:00
If the rise up time is 60 minutes, it will start from 19:00 and evenly drop to the lamp off within 60 minutes, that is, it will start to drop at 19:00 and turn off at 20:00;)

**Run file presets**：(only for preset mode)

**File Set** Click on the bottom icon to enter the setting interface
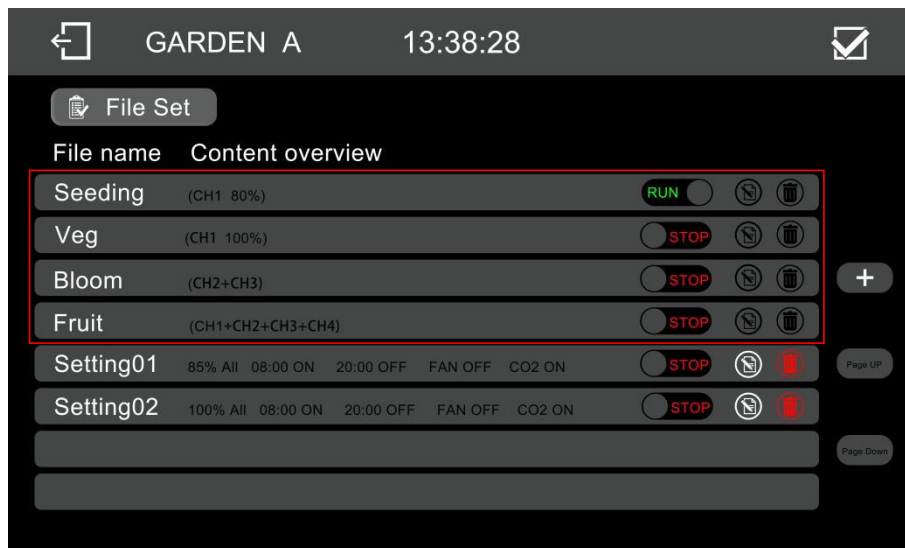


(Photo 01)

The file can be added, deleted (a confirmation window will pop up when deleting), and it can be modified. Only one file can be run at a time. When another file is clicked, a pop-up window is required for confirmation, After confirmation, the previously running file automatically exits and becomes "STOP"，When selecting, a confirmation window will pop up, and the prompt content is:
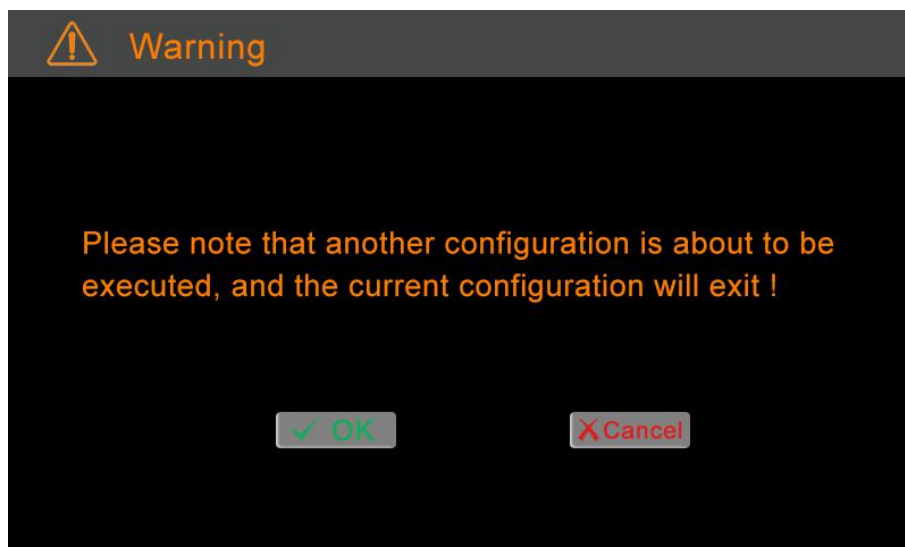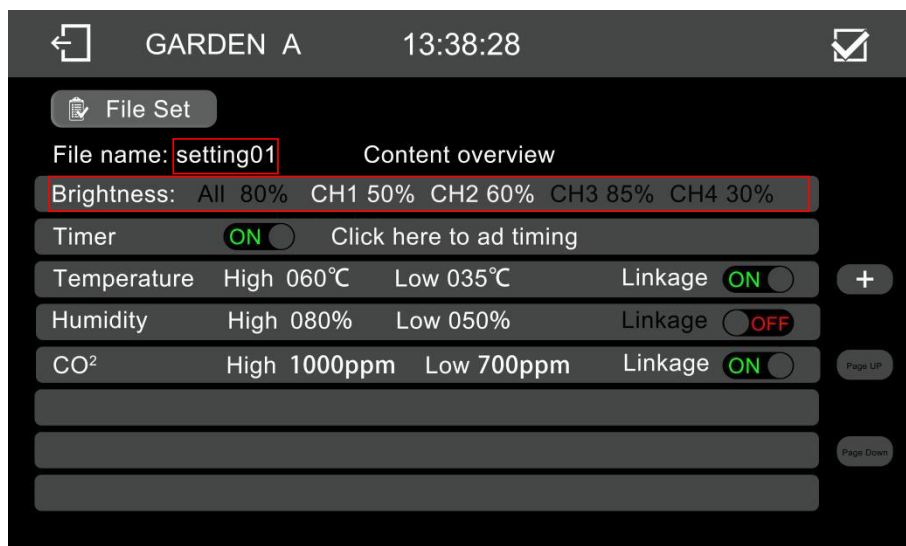


(Photo 02)

Click OK to switch to a new file, click Cancel to exit without switching;

The first four are system presets（area in the red box）, which cannot be modified or deleted.
When the current page is not enough to display, you can turn the page up and down
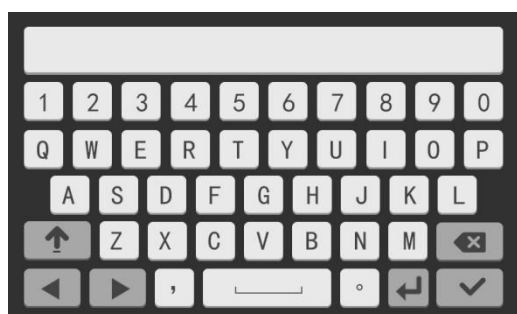After the setting is complete, click Save to confirm

Click the + sign or the modify icon to enter the file modification interface:



(Photo 03)

## 01、file name setting

Click the position of the red box, and the keyboard will pop up to enter the name to be set, confirm and exit;



(Photo 04)

## 02、Brightness and channel settings

See (Photo 03)row 2;

"ALL" in the red box indicates that all channels are turned on, the number after "ALL" indicates the total brightness percentage, CH1-CH4 indicates channels 1-4, and the corresponding numbers are the brightness percentage set by the current channel; white indicates the selected (current channel is open), black is unselected (the current channel is not open);
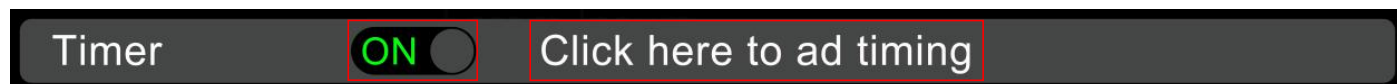


(Photo 05)

Description: The content set in Figure 5 indicates:

Total brightness is 80%

The current open channel is: CH1 Brightness is 50% CH2 Brightness is 60% CH3 Not turned on CH4 Not turned on
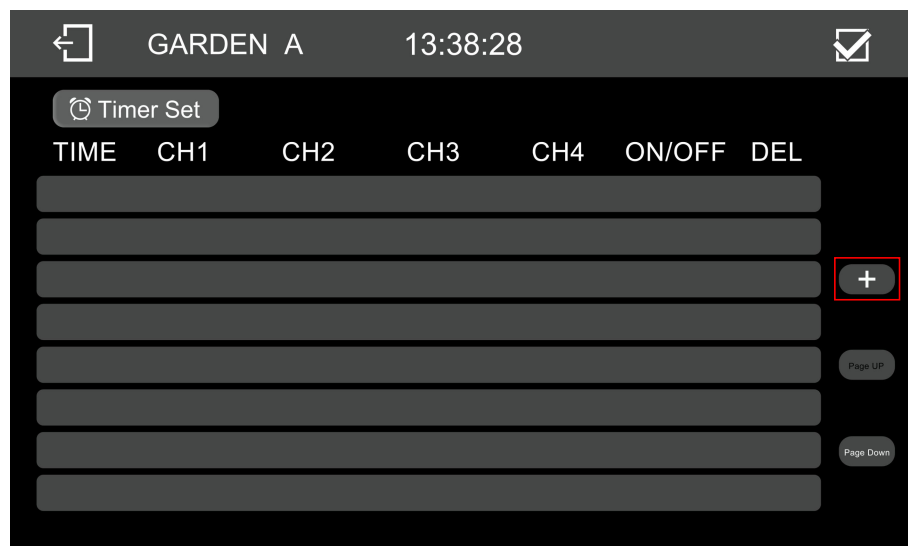
## 03、**Timer settings**(only for preset mode)



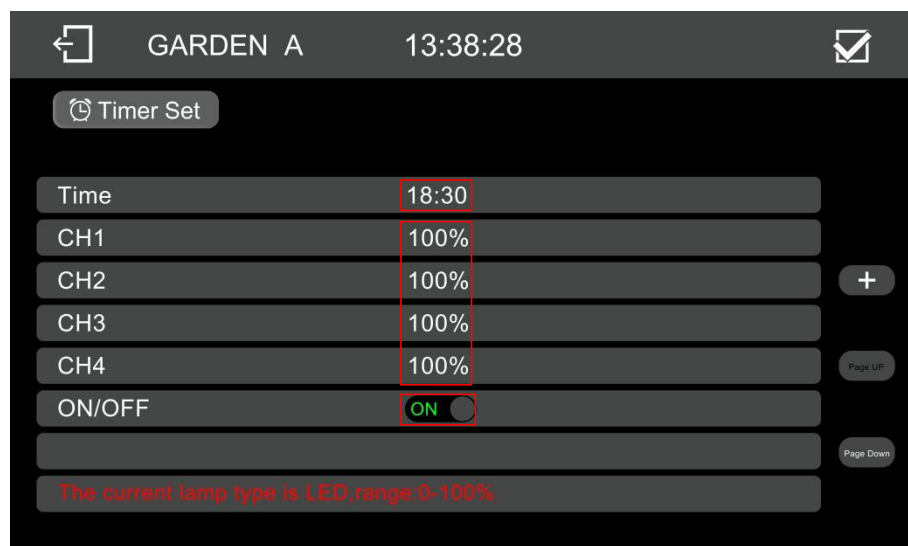ON: Indicates that the timing function is enabled
OFF: Indicates that the timing function is not enabled
Click "Click here to ad timing" to enter the timing setting interface

Timed interface:



Click the "+" sign to start increasing the timing



Execute time setting, click the first two digits, the numeric keypad will pop up to set the hour, and then click the last two digits to pop up the numeric keypad to set the minute;
Click the corresponding number of the channel to set the execution brightness of the channel, and the numeric keyboard settings will pop up; the keyboard is as follows:
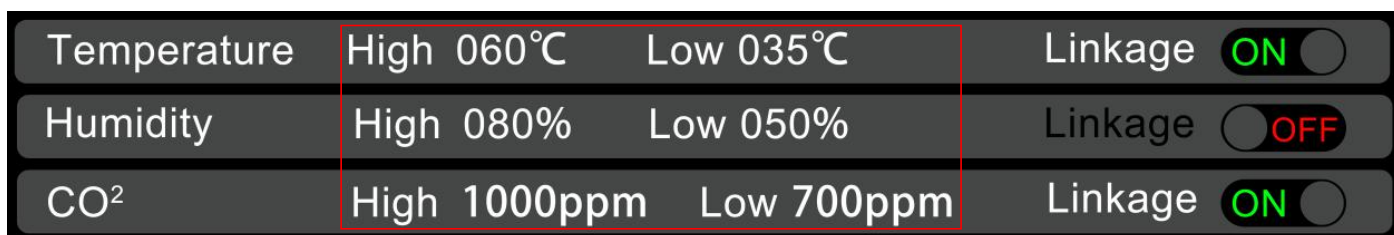
After setting, click on the upper right corner to confirm and return to the timing interface;
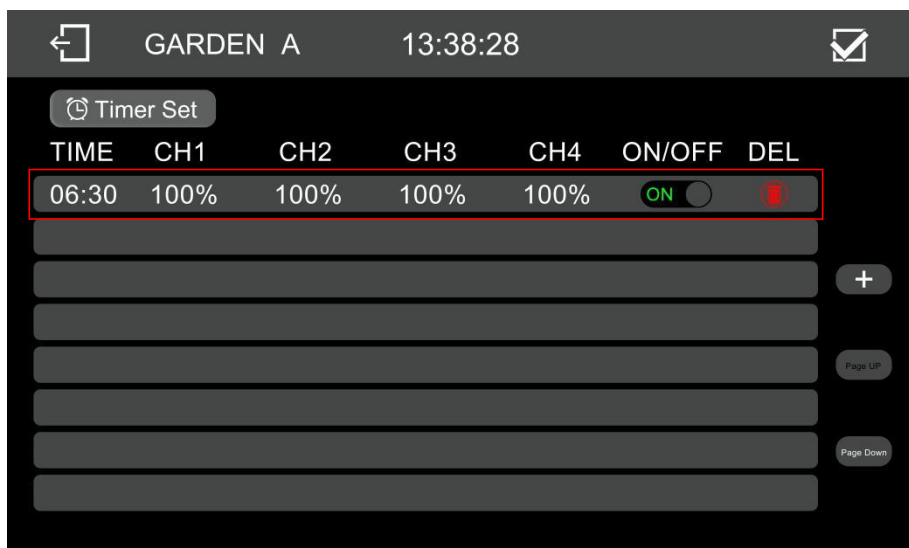


The added timing will be displayed in the interface, and the method of adding multiple timings is the same;

After setting, click on the upper right corner to confirm and return to the file set interface;

## 04、Device control parameter settings:



| Temperature | High 060℃ | Low 035℃ | Linkage | ON |
| Humidity | High 080% | Low 050% | Linkage | OFF |
| $CO_2$ | High 1000ppm | Low 700ppm | Linkage | ON |

The setting method and control method are the same as the "Device control parameter settings" on page 8-9

Linkage ON means that the control equipment works according to the set value;
Linkage OFF means do not start the device to work;

After setting, click on the upper right corner to confirm and return to the file set interface;
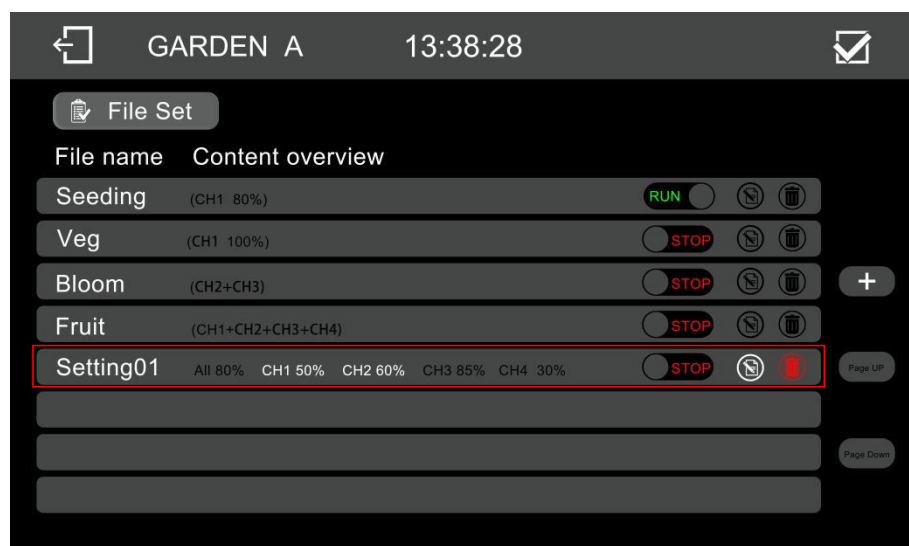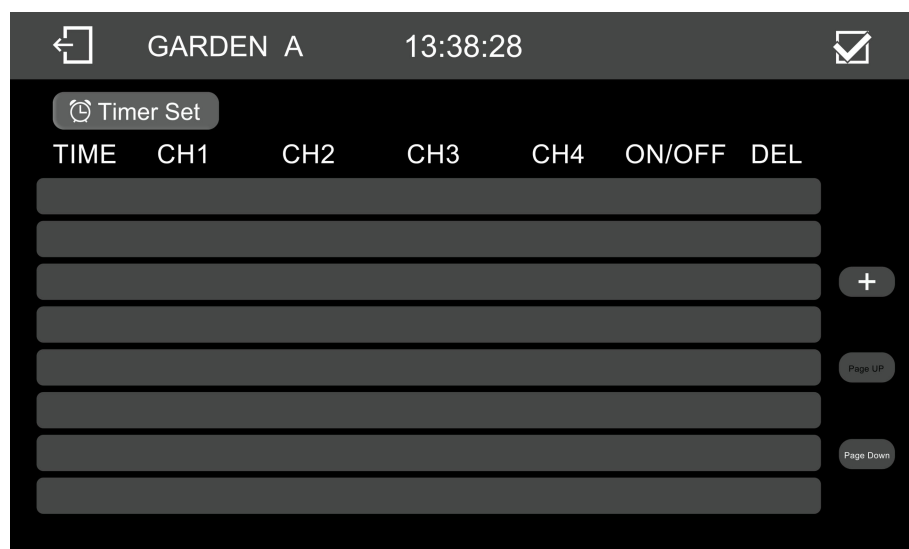


The setting of the new preset file is completed, and other files are set, and the method is the same as above;
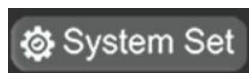
**Timer settings:**(only for customize mode)
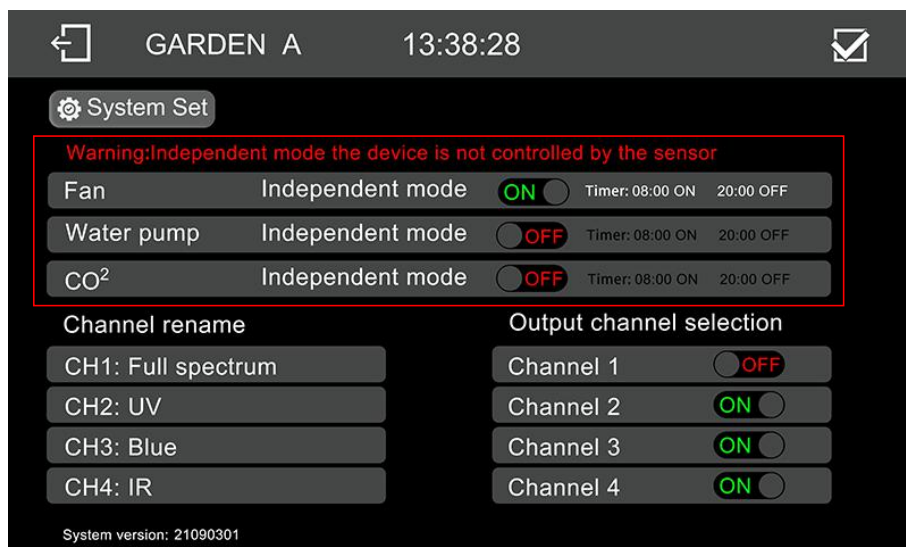


Click this icon to enter the setting interface



*The operation method is the same as above（page17-18　03、Timer settings)*

**System setting:**



Click this icon to enter the setting interface



01、Device independent mode settings (see the red box area above)

ON-indicates that the independent operation mode is turned on (that is, the parameters of the sensor are not related, and the operation is directly turned on and off at a fixed time, which is used for users who do not connect the sensor or need to run regularly)
OFF- indicates that the independent operation mode is not turned on (run according to the parameters set by the sensor)

The independent operation mode of these 3 devices can be set respectively
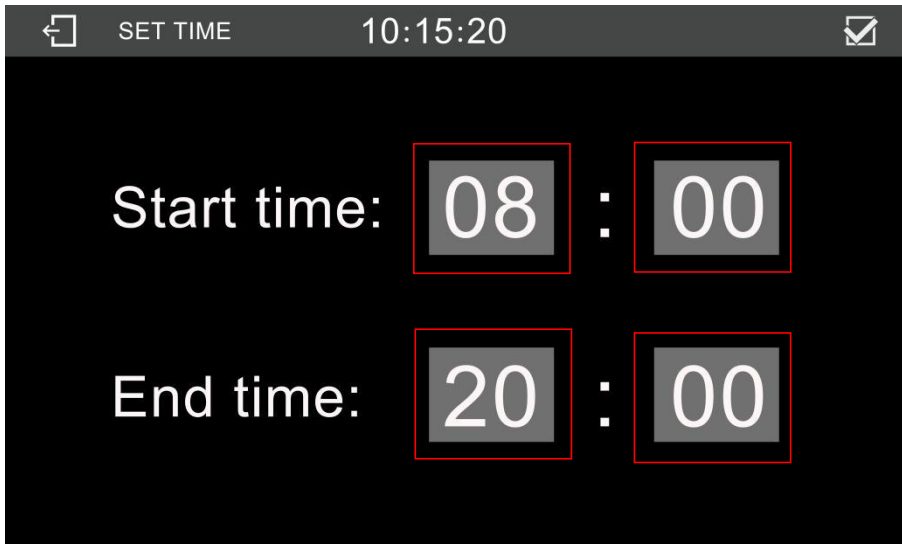After selecting it, a pop-up window will prompt:
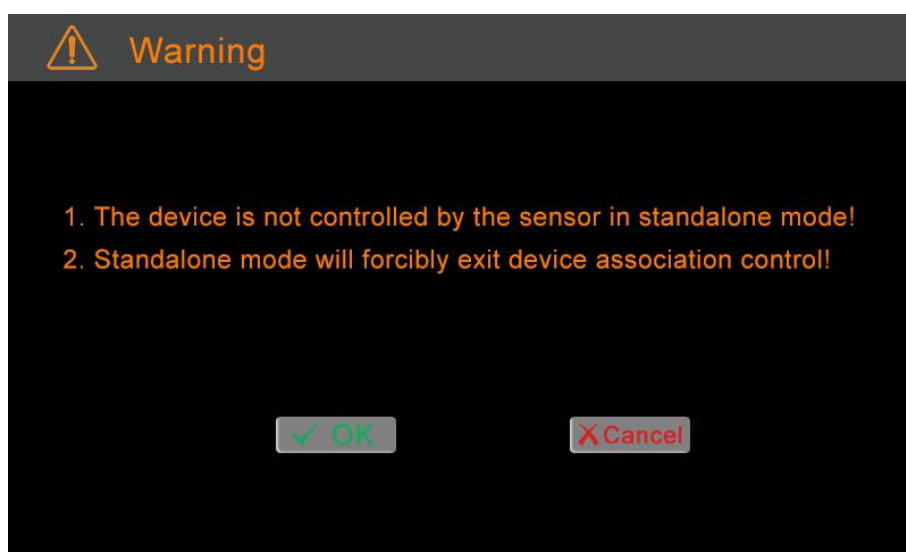


Click "OK" to confirm and exit
Click "Cancel" to cancel and exit
After opening, the timer area is displayed in white, click the white timer area, and the setting

window will pop up:


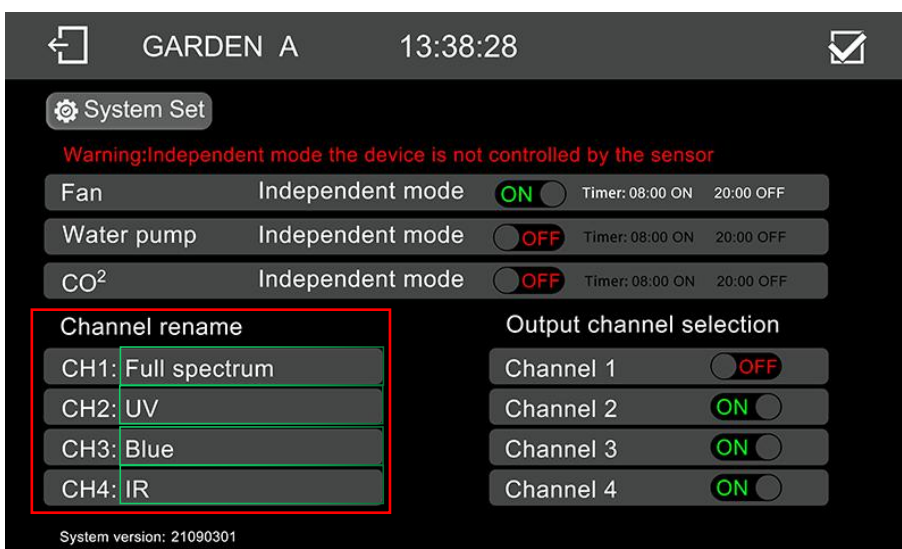
Click the time or minute to be set, and the numeric keyboard will pop up:



Enter the parameters and press "OK" to confirm, and click the upper right ☑ corner to confirm to complete the setting;
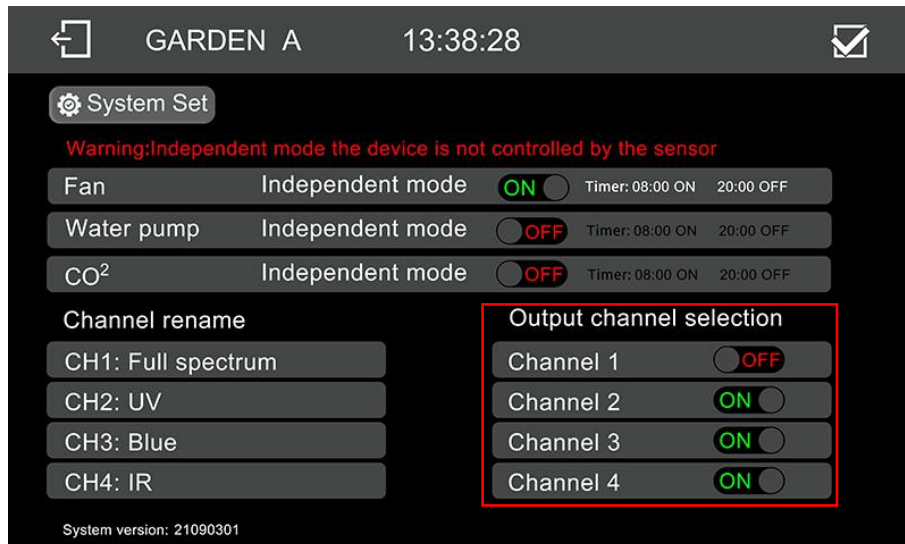
02、Channel rename



(see the red box area above)

Click the area behind the channel to be modified (see the green box area above) to pop up the full keyboard, enter the channel name, click "√" to confirm and return; the name is recommended not to exceed 8 characters;The modified name will be displayed in sync with where the channel is associated；

03、Channel selection



(see the red box area above)

Used to set the number of channels that need to control the output, OK- means open, OFF- means close;
(Example: if only one channel is enabled, only one channel will be displayed on the interface, and the timing interface will also display one channel synchronously, which can be used as a single-channel product)
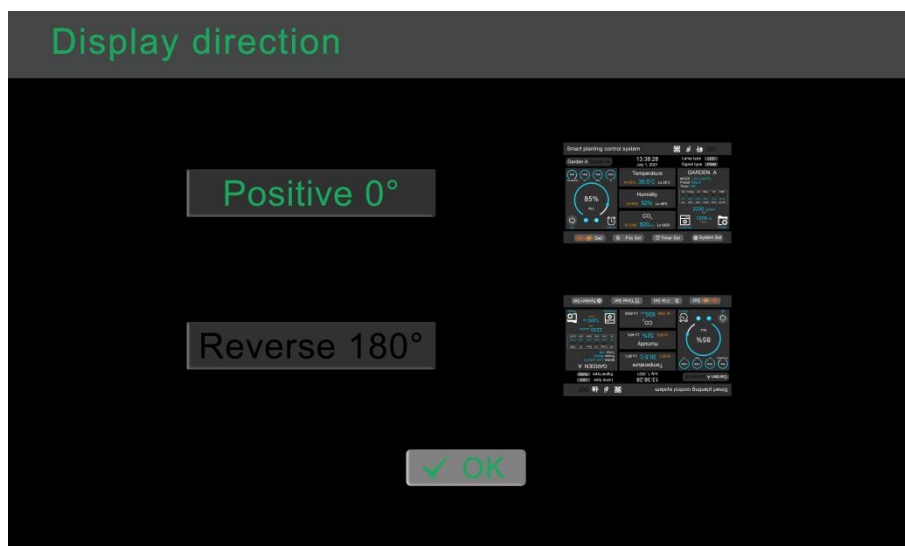
04、System version:
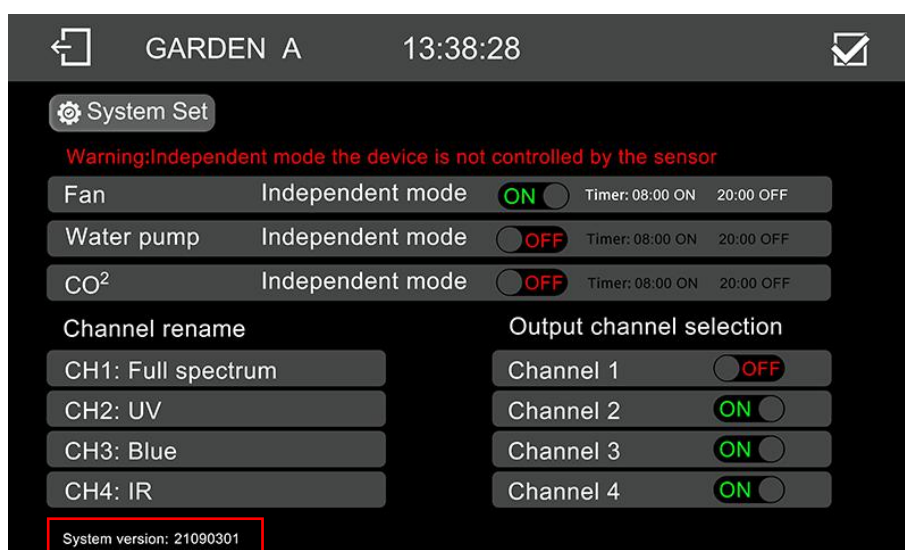


(see the red box area above)
Used to display the current system version number and production batch;

**Other function description:**

1、Display orientation switch:



Press and hold the red area in the upper left corner for 3 seconds, and the setting interface will pop up:



The factory default display direction is 0 degrees (that is, the direction of the product connection port is downward). Press OK and automatically exit the setting interface;
If you want to set it to 180 degrees (that is, the direction of the product connection port is upward), press OK and the switch is successful, and it will automatically exit the setting interface;

## Structural dimension drawing
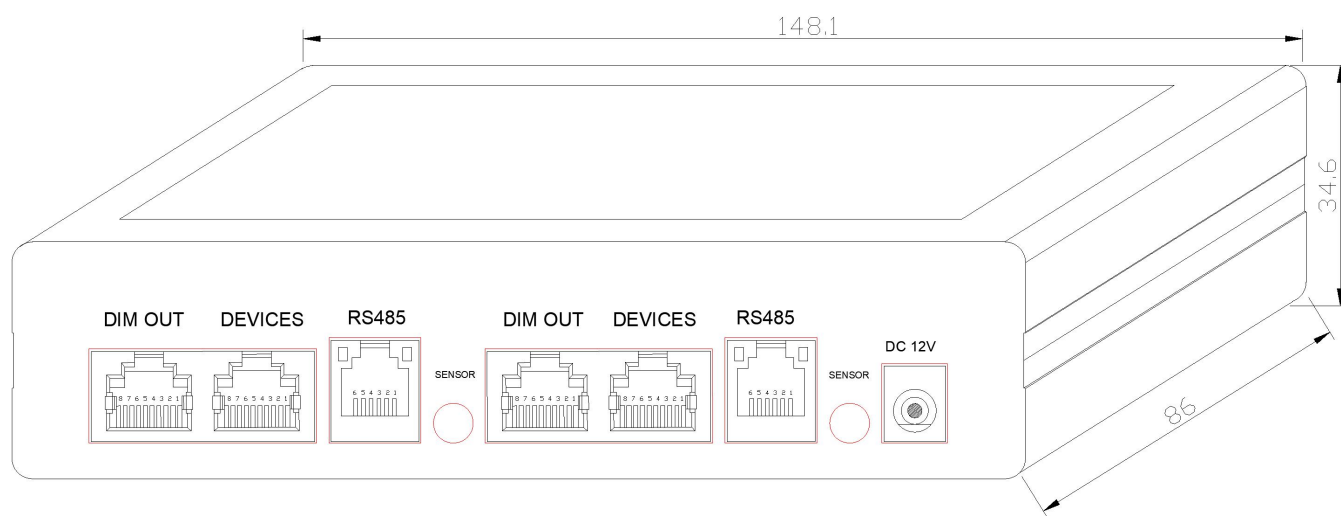
## FCC Statement

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.

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.

Caution: Changes or modifications not expressly approved by the party responsible for compliance  could void the user's authority to operate the equipment.

## Radiation Exposure Statement

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.