

# SMART IRRIGATION CONTROLLER

## SICW01 USER MANUAL



## 1. Introduction

Thank you for purchasing the SICW01 Smart Irrigation Controller. The product is WiFi&BLE-enabled. This accompanying manual provides comprehensive guidance on the product's installation and usage. Prior to employing the device, it is crucial to read and comprehend the manual thoroughly and adhere to its stipulations. This product is ideal for irrigation of plants, including flowers, trees, grains, and vegetables, in electric supply environment within greenhouses, courtyards, and outdoor planting areas.

## 2. Product Description

- **Wireless Network Remote Control:** Through the pairing operation of the mobile phone and the device, the device can be wireless connected to the WIFI network or hot spot, and the user can remotely control the irrigation task, monitor the weather and the implementation of the plan. Compatible with traditional manual button operation, instant and fast irrigation.
- **Multi-channel sequential irrigation:** The smart irrigation controller has one master valve (pump) control port and eight irrigation output ports. Each irrigation output port corresponds to an watering zone, and two electromagnetic water valves can be connected in parallel to irrigate simultaneously, which can be expanded to control up to 16 irrigation points (locations). Each set zone is irrigated successively in each period to ensure sufficient water pressure and reduce the load of equipment and power supply.
- **Scheduled timing control:** Users can plan the scheduled irrigation tasks of the device, set the irrigation start time of the task, irrigation zones, irrigation duration for a zone, and set the cycle period of the task. A plan can contain multiple timed irrigation tasks, and the device is executed as planned.
- **Intelligent weather and environment detection :** Users enable the intelligent weather function in the APP, if the weather report is freezing, windy, rain and snow, you can set to not perform irrigation tasks. (After rain and snow, scheduled irrigation can be postponed for several days.). Enable a (soil) sensor to detect soil moisture and stop irrigation if soil is wet.
- **Sharing equipment :** Users can share the irrigator equipment to family members or colleagues through the Jusbtek account through the device management in the APP, so that the shared person can also operate and control the equipment.
- **Offline Irrigation:** After the device is successfully paired with a Wi-Fi network or hotspot, it can set up scheduled irrigation tasks, and the device can still execute the scheduled irrigation tasks even when it is offline.
- **AC Low voltage power supply, easy installation:** The irrigation device is supplied with AC 24V low voltage power through a power adapter to ensure safety. Users only need to fix the irrigation device in a location that can avoid rain and moisture, connect the corresponding wires to the interface terminals, turn on the power, and pair it with the mobile APP to use it.
- **Directly drive water pump:** The controller and solenoid water valves are supplied with DC 24V low voltage power through a power adapter to ensure safety. The controller can directly drive the water pump by connecting the electric supply, which saves the installation and cost. Water pumps are needed in some places to pump water from wells and other sources.

### 3. Product Information

#### 3.1 Product Parameters

<b>Power Adapter</b>	<b>AC</b>	<b>Input: AC 120V (depending on electric supply ,AC 220V in china) , Output: AC/DC 24V, 2A</b>
<b>Input Voltage</b>	<b>AC/DC</b>	<b>24V AC/DC</b>
<b>Irrigation output ports</b>	<b>AC/DC</b>	<b>8 Channels (8 zones, each controlled independently)</b>
<b>Master Valve (Pump) Control Port</b>	<b>AC/DC</b>	<b>1 Channel</b>
<b>Extended Irrigation Point</b>		<b>16</b>
<b>Transmission Protocol</b>		<b>Wi-Fi + Bluetooth LE</b>
<b>User Interface</b>		<b>Jusbtek Smart Phone APP&amp; Button</b>
<b>Output Device</b>		<b>AC solenoid water valve (rated voltage AC/DC 24V, one single valve power <math>\leq 20VA</math>), Recommend selecting low-temperature solenoid valve with power <math>\leq 10VA</math></b>

#### 3.2 Notice

This product should not be used in rainy and humid environments (wet location). If used outdoors, it should be fixed in a building or box that is waterproof and moisture-proof. The building or box should not be made up of excessive metal materials, as this can interfere with the transmission of wireless network signals. The suitable temperature range for irrigation work is 0° C to 30° C.

- *To ensure the safety of you and your family, make sure the power is turned off or disconnected during installation to avoid the risk of electric shock or damage to the equipment!*
- *Children are not allowed to install or use this product alone.*
- *The water pressure will inevitably decrease after passing through the water valve. The valve flow diameter is required to be larger than that of the nozzle, and it is not recommended to connect two or more nozzles with one valve.*
- *To fully use this product, you need 2.4G WIFI connected to the Internet, and first download the "Jusbtek Smart" app*



Easy smart APP anytime, anywhere

## 4. Safety Advice and Warnings

**Warning!** Please read the following instructions carefully before installing or using this product.

- Always adhere to local regulations carefully when installing or using this product!
- Do not disassemble this product. Disassembling or modifying the product can be dangerous and will void the warranty.
- This product may cause interference to radio equipment. It should not be installed near the maritime safety communication equipment or other critical navigation and communication equipment operating between 0.45 and 30 MHZ.
- Do not use this product when the power cable is damaged, or the fixed wires are loose, or the line is short-circuited.
- Do not expose this product to
  - Condensation, moisture, fog, fog or direct spray on the product
- The product should be used within the specified temperature range (-15 to 45 ° C)
  - Direct sunlight or HID lamps during use may heat the aging product housing
- Always disconnect the product from the power supply before performing any maintenance.

Do not use the product near flammable, explosive or reactive substances.

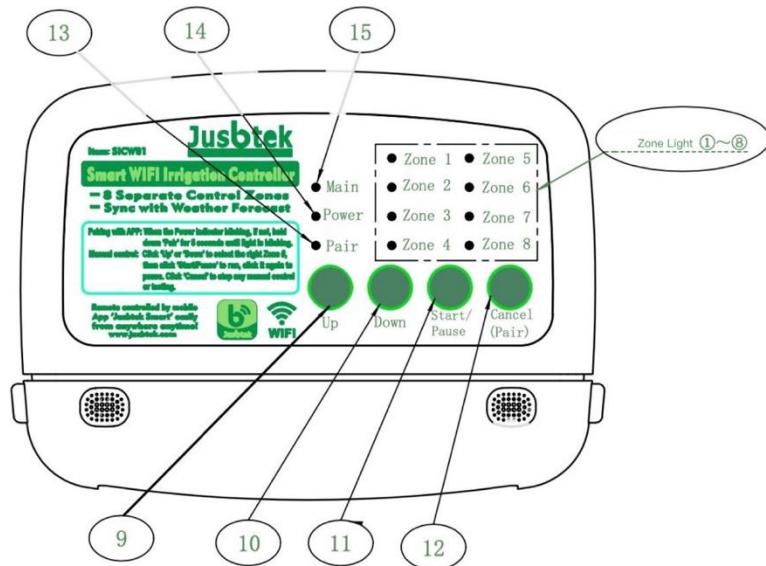
The installation and use of this product is the responsibility of the end user. Incorrect use or installation may cause the irrigator equipment to malfunction. Any damage to this product and electronic security due to incorrect installation and use will void the warranty.

## 5. Packing List

Ac power adapter	1
Smart irrigation controller	1
User Manual	1
Mounting Screws and wiring caps	1 pack

## 6. Smart Irrigation Controller Panel

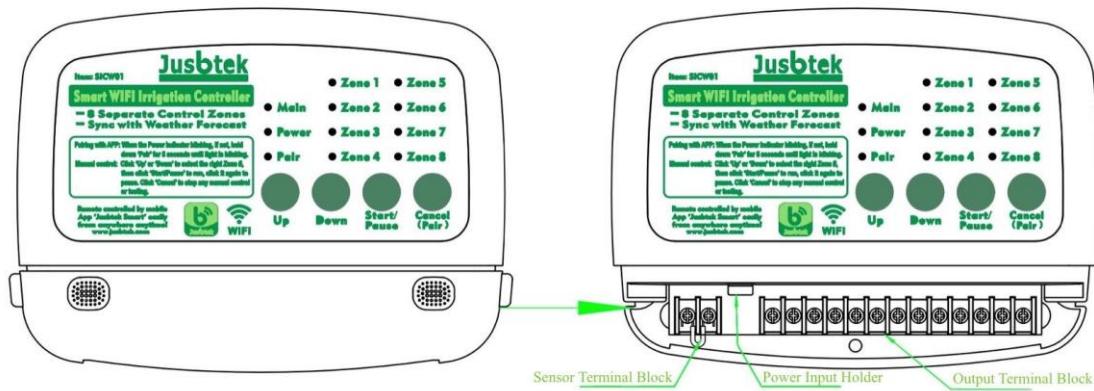
### 6.1 Front Panel Buttons and Indicators

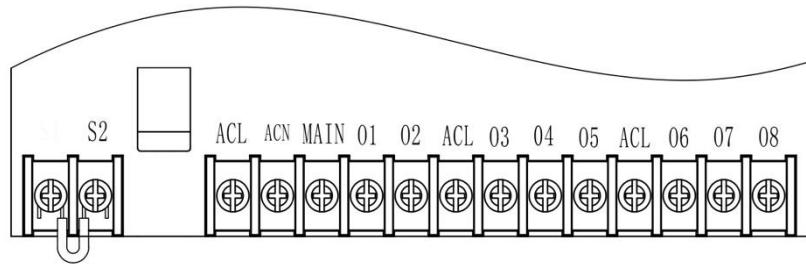


- As marked in the figure, there are 8 regional working status indicators in the dotted frame and the green one. For example, Zone 4 is being irrigated, and the green indicator corresponding to Zone 4 is on.
- ⑨ **UP** Area switch up button.
- ⑩ **Down** Area switch down button.
- ⑪ **Start / Pause** Start/Pause Key on starting or stopping irrigation for a single area.
- ⑫ **Cancel (Pair)** The Cancel/ Pair button. Distribution function is valid if held button for more than 5 seconds. In the irrigation state, press the button to cancel all irrigation.
- ⑬ **PAIR** Distribution network indicator, red. The indicator flashes when the product seeks to pair with a phone to the Internet.
- ⑭ **Power** Power indicator, red.
- ⑮ **Main** Irrigation running indicator, green. corresponding to the master valve working indication.

### 6.2 Front Cover and Interface

Press both sides of the front cover plate and open the front cover plate to display the (soil) sensor terminal block, power input socket, and output terminal block for connecting valves.





**S1, S2:** The two terminals are used to separately connect two wires of a soil sensor. The terminals must be connected with a short-circuit block If the sensor is not used by default.

**24VAC:** Power input socket. Input voltage AC 24V, DC5521 socket connected to power adapter.

**ACN:** Interface terminal at neutral wire of the External AC 24V input cable. When the power adapter is used to power, the ACN terminal is suspended.

**ACL:** The three common terminals connected to the solenoid valves. They are electrically connected to each other. One ACL terminal can also be connected to live wire of an external AC 24V input cable. Do not connect an external AC 24V input cable when the power adapter is used for power supply.

**MAIN:** Interface terminal to Control the master solenoid valve (or pump start-relay).

**O1~O8:** Output interface terminals to control valves at the corresponding irrigation zone.

**24VDC:** Power input socket. Input voltage DC 24V, DC5521 socket connected to power adapter.

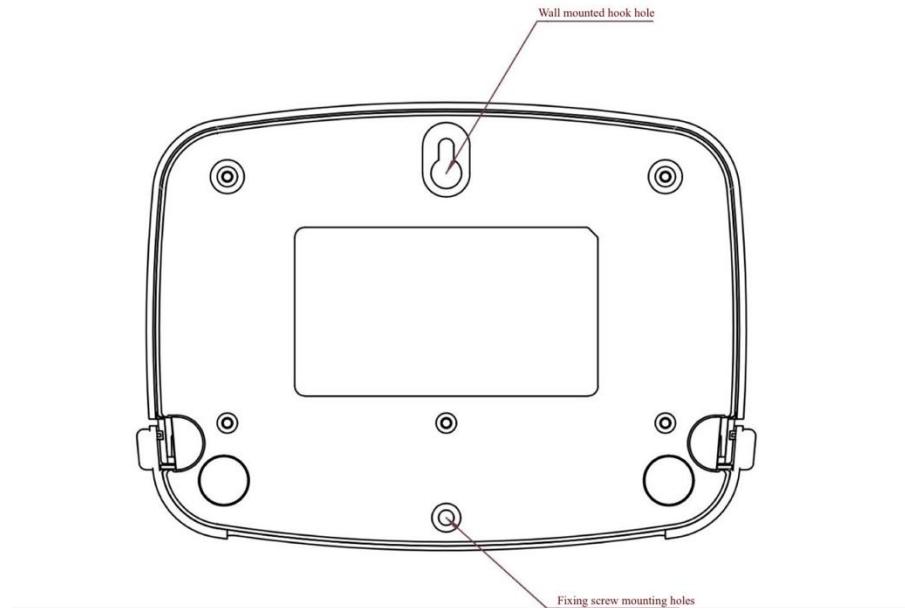
**V+:** Interface terminal for DC 24V positive pole, when the master valve is used to control irrigation, please connect it to the M2 terminal.

**V-:** Interface terminals for DC 24V negative pole. The two common terminals connected to the solenoid valves are called "common port", which are electrically connected to each other inside the device.

**M2, M1:** Control interface terminals connected to the water pump (or master solenoid valve) are called "control port".

**O1~O8:** Output interface terminals used to drive valves at the corresponding irrigation zones are called "output ports".

### 6.3 Rear Panel



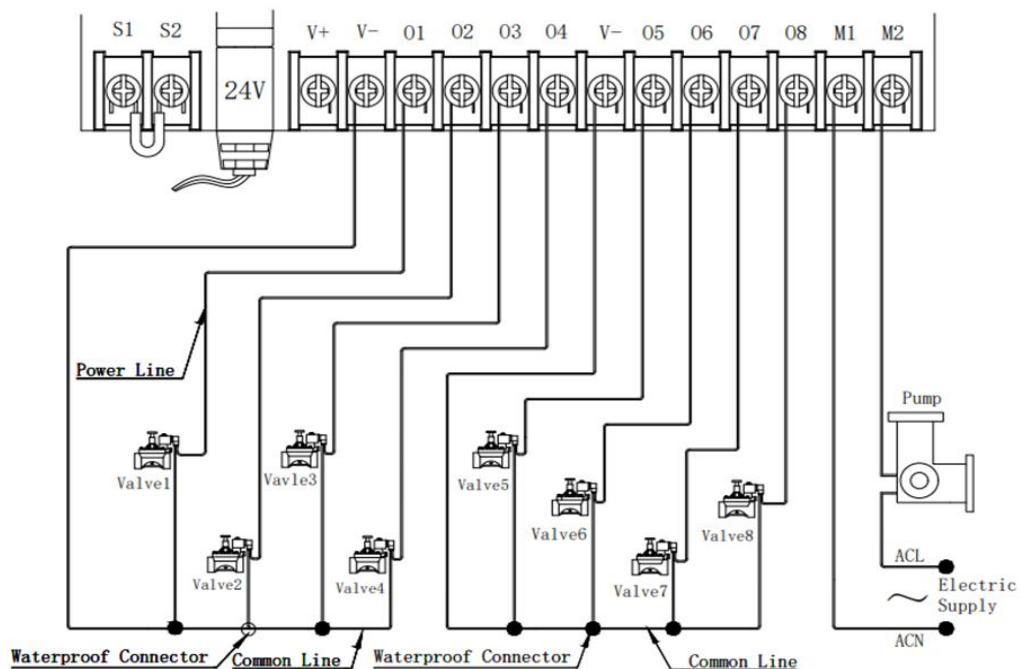
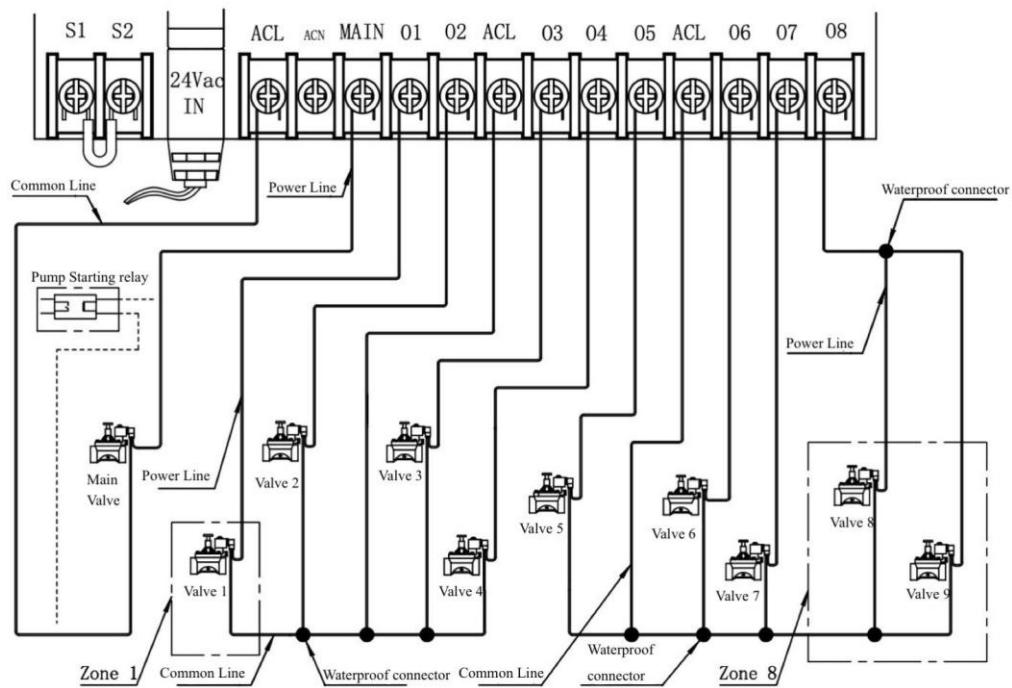
#### wall mounted installation

Drive a screw into the wall, leaving an 1/4" gap between the screw-head and the wall. (use the supplied wall plug anchors if necessary).

Locate the wall mounted hook hole on rear panel and hang it securely on the screw.

Open the front cover, Insert a second screw to the fixing screw mounting hole and tighten it to securely mount the controller onto the wall (use the supplied wall plug anchors if necessary).

## 7. Irrigation Controller Wiring Diagram and Installation



Open the front cover. As an wiring example, connect cables according to the figure above, there are eight irrigation zones include nine watering points, the two valves (valve 8 and valve 9) are connected in parallel to the output port 08 corresponding to irrigation zone 8.

The instructions and suggestions for wiring are as follows:

1. Two wires of a solenoid valve are separately connected to the ACL common port and the output port, the electrical line connecting the ACL port is "common line", and other electrical line connecting the output port to drive the solenoid valve is "power line". Each "power line" is independent and corresponds to a specific zone's solenoid valves or master valve, and cannot be electrically short-circuited to each other. Each "common line" is short-circuited and connected together inside the device.
2. When there are few irrigation zones, the terminals of unused output ports can be idle.
3. The ACL common port has three terminals, and the wiring quantity of each terminal should be evenly distributed to avoid excessive wiring quantity of any one terminal. When many solenoid valves are connected to the product, in order to solve the problem of excessive wiring on the ACL common port, two or more wires of the "common line" can be connected in parallel to form a thicker wire outside the device, and then connect it to an ACL terminal, such as using waterproof splice connector around the valves, or using screw-on wire connector around the device with waterproof environments.

Refer to the above, connect the "power line" and "common line" of the solenoid valves to the corresponding terminal of the controller and complete all wiring, tighten the terminal screws to prevent short-circuit between different circuits and looseness. After all wiring is completed and checked, insert the DC plug of the power adapter into the DC socket of the controller, cover the front cover plate, and then connect the cord of power adapter to electric supply.

#### **Attention:**

- **Wiring installation must be carried out in a power off environment.**
- **In order to ensure adequate water pressure, a set of valve control outlets is limited to connecting a maximum of two solenoid water valves.**
- **The minimum requirement for one wire connecting the valve is AWG20 wire gauge, which can only meet runs of 350 feet or less.**
- **If there are several sets of output port connected with two solenoid valves, it is recommended not to use the master solenoid valve to satisfy sufficient irrigation water pressure.**

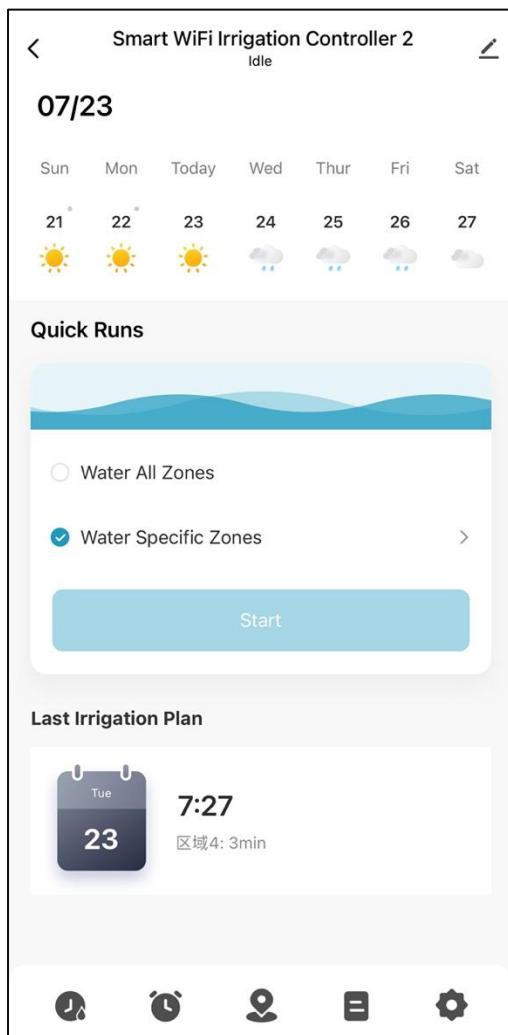
## **8. Product Operation**

### **8.1 Front Panel Operation**

After the product is plugged into the Power adapter and powered on, the red power indicator lights up. You can press the Start/Pause key to start or stop Irrigation. The Up and Down keys can be used to manually select the irrigation zone. After selecting the irrigation zone, the indicator of the corresponding zone is shining. When the light is shining, press the Start button quickly, and the irrigation zone valve and master valve corresponding to the indicator light start to work, and carry out manual rapid irrigation; The two green indicators corresponding to the working status of the valves are also remain on for a period (10 minutes by default), during which time press the Start/Pause key or Cancel key to stop irrigation. Press and hold the button of Cancel (Pair) to cancel/start the distribution network for more than 5 seconds, and the red Pair indicator will blink and enter the pairing mode of the phone. Open the "Jusbtek Smart" APP on the phone and you can find the smart irrigator device that pops up. After clicking Add, the Pair indicator will stop blinking and be steady on. In this way, the smart irrigator has removed the old network connection and will remain connected to the WIFI network paired with the current mobile phone.

## 8.2 “Jusbtek Smart” APP Operation Introduction

After the networking is complete, click on the irrigator device on the APP, and the main operation interface of the following APP will appear.



→ There is a device information and management button  on the top right of the main interface. After paired the mobile phone with the device, clicking the button select the "Share device" menu to "Share with others" to share the control of the device with others.

→ You can roughly check the scheduled task completion date and plan (you need to make a schedule first), weather conditions, and whether smart weather is enabled.

→ In the middle of the main interface is the quick irrigation task bar operated manually on the APP, you can select "water all zones" or "specific zones", then set the Runtime of various zone (at least 1 minute). Note: "Smart weather" and "rain and snow days delay" act here.

→ Click the Start irrigation button to manually complete the real-time irrigation task in the APP.

→ Shows the zone and completion time of the last irrigation, as well as the planned time for the next irrigation.

→ There are five Settings buttons at the bottom of the main screen.



Click the five buttons at the bottom of the main operation interface to complete the following Settings.

**Rain and snow delay** (button): Choose to turn on or off the smart weather function, and choose to delay the duration of the irrigation prohibition after rain and snow (no delay, or 24, 48, or 72 hours delay).

**Timing** (button): Set the start time and cycle period of the task, irrigation runtime of various zones, and other parameters. A plan can set multiple tasks simultaneously, for example, all zones need to perform 1 minute watering work twice at 8am and 4pm every day. You can first add an 8am task, click the "Timing" then "+" button, select "Normal Timer" mode, choose "water all zones" in the "Runtime" menu to adjust the runtime to 1 minute, set the task cycle period to be selected daily in the "Weekly Cycle", and set the task start time to 8am, press the confirm button to finish the one task addition; then click the "+" button again and follow the above steps to change the start time of the other task to 4 pm, complete the settings for both tasks After confirmation.

**Area** (button): Set the zone where irrigation is enabled or disabled. There is no change to the zone settings of existing irrigation tasks, only affecting newly added tasks.

(Irrigation) **Calendar** (button): Detailed query of past and future irrigation tasks completed and planned, including weather conditions.

(Climate and Environment) **Setting** (button): Set under freezing and windy climate conditions, without irrigation, and enable the sensor to detect soil moisture.

**Suggestion:** The freezing temperature value should be 0° C (32F) and the wind speed should be prohibited at 11M/S(25MPH).

You can scan the QR code to watch the video for more detailed app instructions.



### 8.3 APP Operation Manual

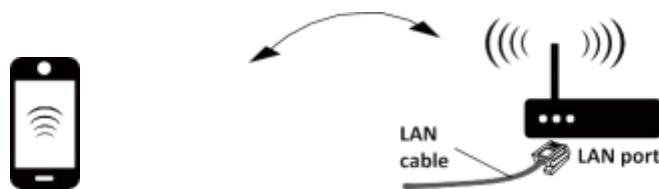
**Please prepare.**

**Smartphone and WIFI wireless router.**

#### ● WIFI Router

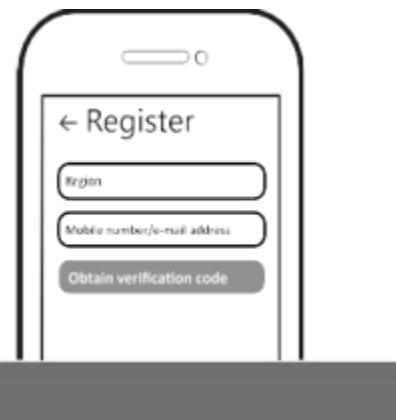
**Supporting the 2.4GHz and 802.11 b/g/n bands. 5GHz is not supported.**

#### ● iPhone , iPad ( ios 7.0 or higher) , Android 4.0 or higher



**①** Scan the QR code to download the Jusbtek Smart app, you can also search the keyword "Jusbtek Smart" to download the app in the app store.

**②** Mobile number or email address Sign in or register



③ Plug in and switch on the power supply of the power adapter. The red light of the Pair indicator of the controller flashes rapidly, indicating that it has entered the pairing mode. If not, press and hold the Cancel (Pair) distribution button for more than 5 seconds to reset and reset it into the pairing mode. See if the Pair indicator flashes quickly, if not, press the button again to reset the device. After success, enter the "Jusbtex Smart" APP interface on the phone for pairing and distribution network of the device. You can scan the QR code to watch the video for app instructions.

## 9. Limited Warranty

The Company guarantees that the mechanical and electronic components of this product and the materials and processes used under normal operating conditions are free from defects for a period of 12 months from the date of original purchase.

### FCC Warning

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.

### Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.