

# User's Manual

## Infrared People Counter

HX-HE2(186)

## Statement

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## Notice

- The parameters used in the screenshots shown in this manual are only used as setting examples for reference and may not be completely consistent with the actual situation. Please set the parameters according to your actual needs.
- The housing is prohibited from being disassembled during operation. Anti-disassembly reminder: Be careful when manually disassembling the housing of the device to avoid damage to the device. This is a Class A product. In a living environment, this product may cause radio interference. In this case, the user may need to take practical measures to deal with the interference.
- Due to different software versions, the screenshots shown in this manual may not be exactly the same as the web interface of the product you purchased. Please configure your product according to the actual web interface.
- If you find that there is a shortage or damage to any accessories, please contact your local dealer in time. The product pictures/screenshots in this manual are for reference only and are intended to help users install and configure the product. Please refer to the actual product/actual interface for details.



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# 1. Product Introduction

## 1.1 Product Introduction

Infrared people counter is mainly used for accurate statistics and management of entrance and exit traffic. The device consists of two parts: the transmitter and the receiver. It uses infrared blocking technology. When pedestrians or objects pass through the monitoring area, it instantly triggers automatic counting, realizing seamless statistics in both directions and ensuring accurate data.

Supports 2.4GHz/5GHz dual-band WiFi transmission, ensuring that data transmission can maintain excellent stability and efficiency in different network environments. It also has the function of resuming transmission after network interruption, which can safely store data even if the network is interrupted, and upload it immediately after the network is restored to ensure that data is not lost. Users can easily access data remotely anytime and anywhere through the cloud platform or exclusive mini-programs, and conduct in-depth statistics, analysis and efficient management.

The equipment is powered by batteries. The installation process is simple and quick. No complicated wiring is required. It is plug-and-play, which greatly saves time and cost. It is compact, simple and stylish in design. It offers classic black and white color options, which can perfectly blend into various environments without destroying the beauty and harmony of the place.

It is widely used in shopping malls, retail stores, tourist attractions, libraries, museums, restaurants, factories, supermarkets, smart parks, office buildings, public toilets and other scenarios. The infrared people counter is a powerful assistant to improve operational efficiency, optimize customer experience, and achieve accurate traffic management. At the same time, the device provides an open API protocol, supports deep customization and secondary development, and meets the diverse needs of users.

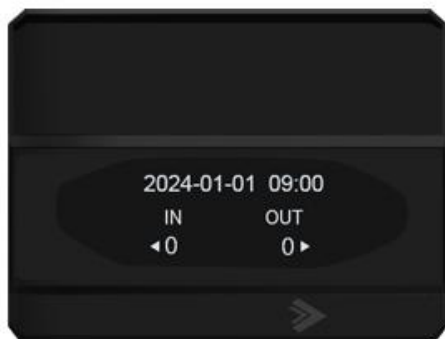
## 1.2 Product Features

- ◆ **Intelligent two-way statistics:** Accurately identify the direction of pedestrians entering and exiting, realize two-way independent counting, and make the data more segmented and accurate.
- ◆ **Minimalist installation experience:** Say goodbye to tedious wiring and drilling, just configure the network simply, install it with 3M super glue, pair it easily, and start using it immediately.

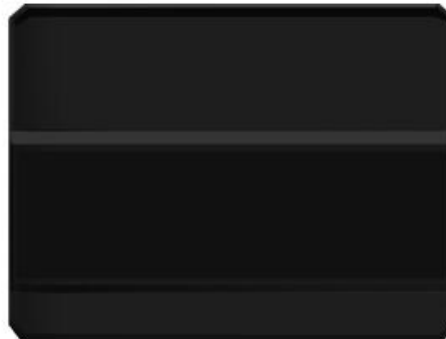
- ◆ **Flexible power supply options:** Provides a 2000mAh large-capacity battery with a battery life of up to 3-6 months, and supports Type-C interface power supply to meet the needs of different scenarios.
- ◆ **WiFi data transmission:** Suitable for WiFi 2.4GHz/5GHz frequency network environment, dual-band use, can flexibly respond to network requirements in different scenarios, ensuring stable and efficient data transmission .
- ◆ **Remote data control :** Equipped with a free cloud platform, you can view real-time and historical data through the cloud platform anytime and anywhere, support multi-dimensional data query, and help make decisions more intelligently. ( The cloud platform supports viewing data every 5 minutes, every half hour, every hour, every day, every week, every month, and every year, and supports data query for different architectures, such as single device, single store, multiple stores, regions, etc. )
- ◆ **In-depth passenger flow analysis:** The cloud platform provides a wealth of passenger flow analysis reports, including festivals, KPIs, peaks and low peaks and other key indicators, presented in visual charts and supported by EXCEL export for further analysis.
- ◆ **Local data query:** supports viewing data on the device screen and web page; the device screen can view historical data for the past **730 days, 36 months, and 10 years** ; the mobile phone can view data on the WEB page after connecting to the device's AP, and the WEB page can view the cumulative data for the past **730 days, 100 weeks, 36 months, and 10 years** .
- ◆ **Open docking capability:** Provides TCP protocol and **SDK data packets** to easily connect device data with various servers, supporting deep customization and secondary development.
- ◆ **Convenience of remote operation:** Multiple key parameters are automatically synchronized with the cloud, and users can remotely set up devices through the cloud platform for more efficient management.
- ◆ **Worry-free data transfer when the network is disconnected:** Built-in offline cache mechanism automatically stores data when the network is disconnected, and can store up to 1720 records to ensure that no data is missed and safe.

## 2. Product Structure

### 2.1 Packing List



Receiver\*1



Transmitter\*1



3M glue\*4



18500 battery\*2



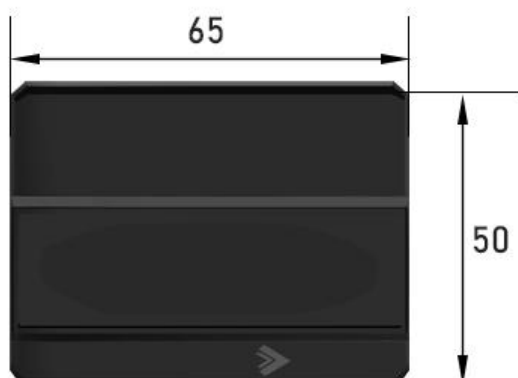
Charger\*1

⚠ The product is available in black and white.

⚠ If any of the above items are damaged or lost, please contact your supplier in time .

### 2.2 Product size

Unit: mm

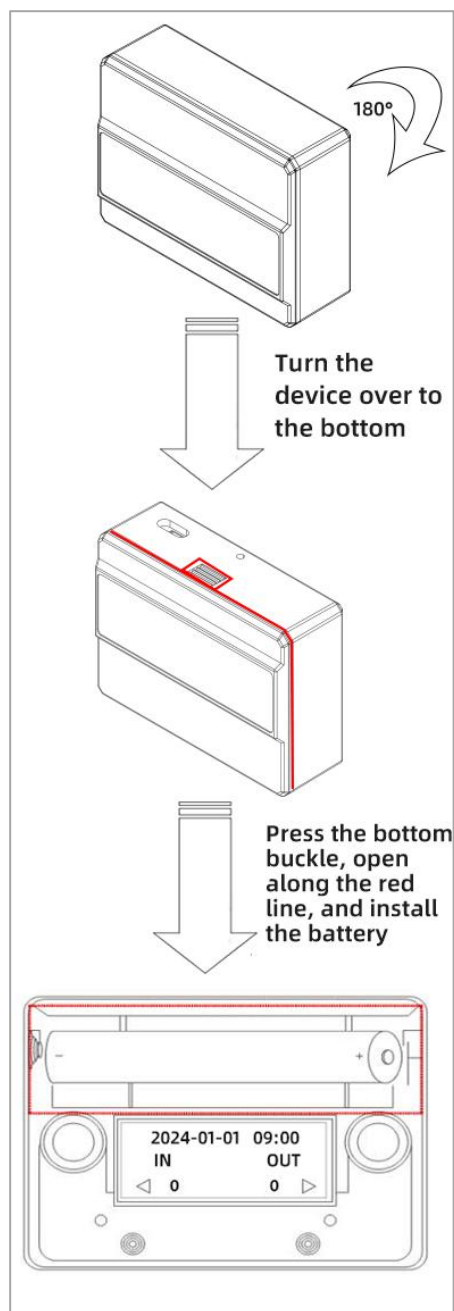


## 2.3 Product Power Supply

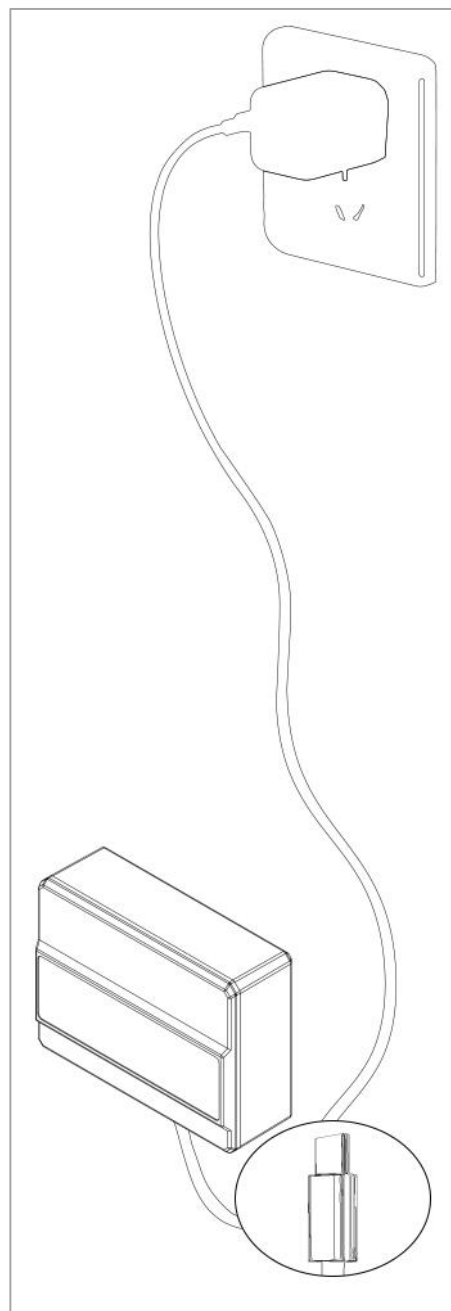
The product has two power supply modes: 18500 battery power supply; Type-C interface powers the entire device.

**⚠ The device automatically turns on when powered on: open the device casing and install the battery. The no response to the battery may trigger the battery protection, two batteries exchange on, activate the battery**

**⚠ The device only supports 18500 lithium batteries.**



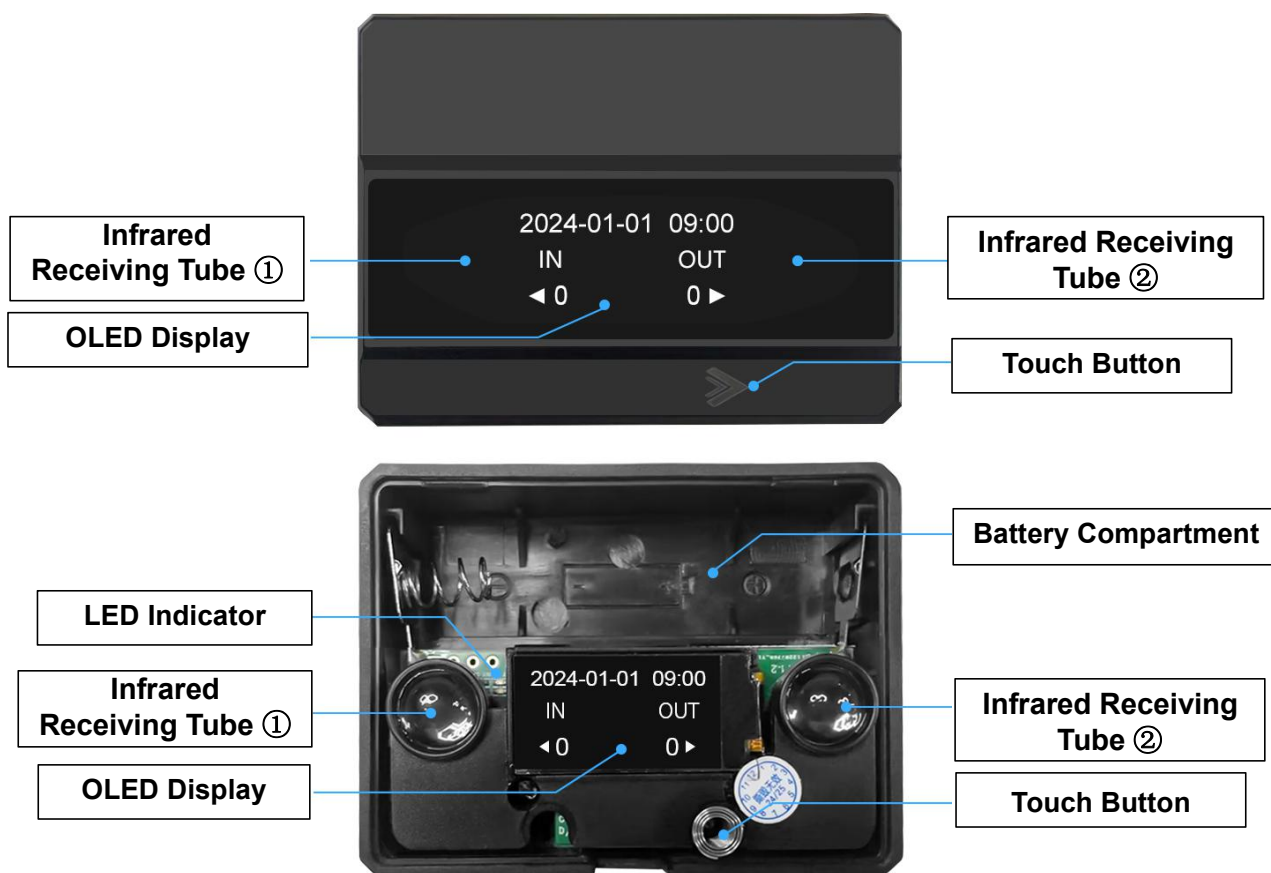
Battery powered



Type-C powered

## 2.4 Appearance and Function

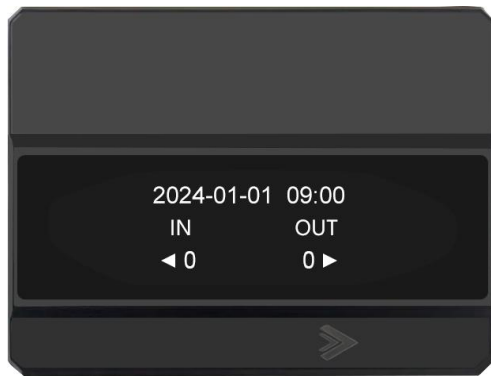
### 2.4.1 Product Receiver



Name	Explain
LED Indicator	① Low battery: The red light flashes once per second ② Out of focus (unsuccessful pairing): the red light flashes once every 2 seconds ③ Low battery and out of focus: The red light flashes once every 0.5 seconds ④ Touch button indicator light: blue light on
OLED Display	Displays the menu and main interface. If there is no operation for more than 10 seconds, the display will automatically turn off.
Infrared Receiving Tube	Receive infrared signal from transmitter
Touch Button	① Short press: switch menu, switch function, wake up the display ② Long press: Enter/return to the previous menu



## 2.4.2 Functional Diagram



### (1) Main Page:

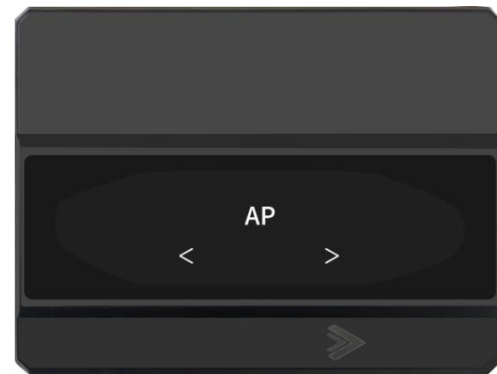
The page showing the number of people entering and exiting shows the date, time and the number of people entering and exiting that day.

**⚠** The main page data is automatically cleared at 00:00 every day

### (2) AP Startup Page:

Long press the touch button to start AP: After starting, the device automatically turns on the hotspot. After the mobile phone is connected, you can set up and manage the device.

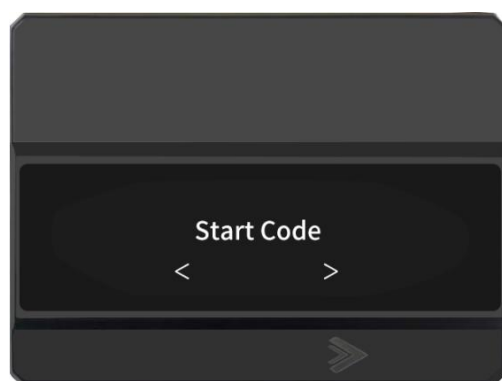
**⚠** Use before installation, <refer to [mobile phone network configuration 3.3](#)>



### (3) Matching Page:

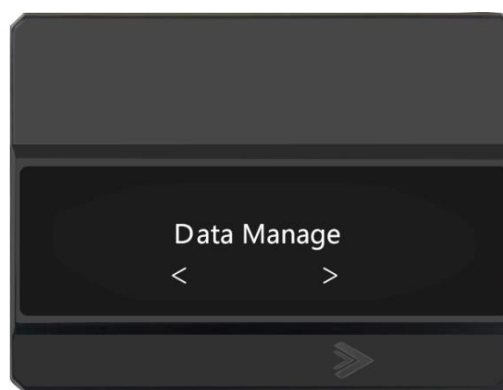
Long press the touch button to start the code matching. The receiving end matches the transmitting end. If it shows 100%, the code matching is successful.

**⚠** Used during installation, <refer to [installation steps](#)>, counting can be done normally only after successful pairing.

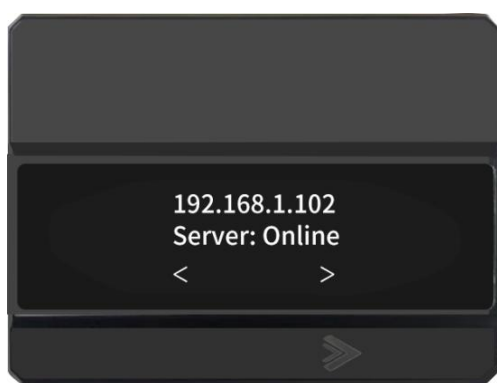


**(5) Data Management:**

You can query the historical data of nearly 730 days, 36 months and 10 years, and can empty the data and clear today's data.

**(4) Server Connection Status:**

This page can check whether the device successfully obtains the IP address, and whether the connection to the server is normal.

**⚠ State Interpretation**

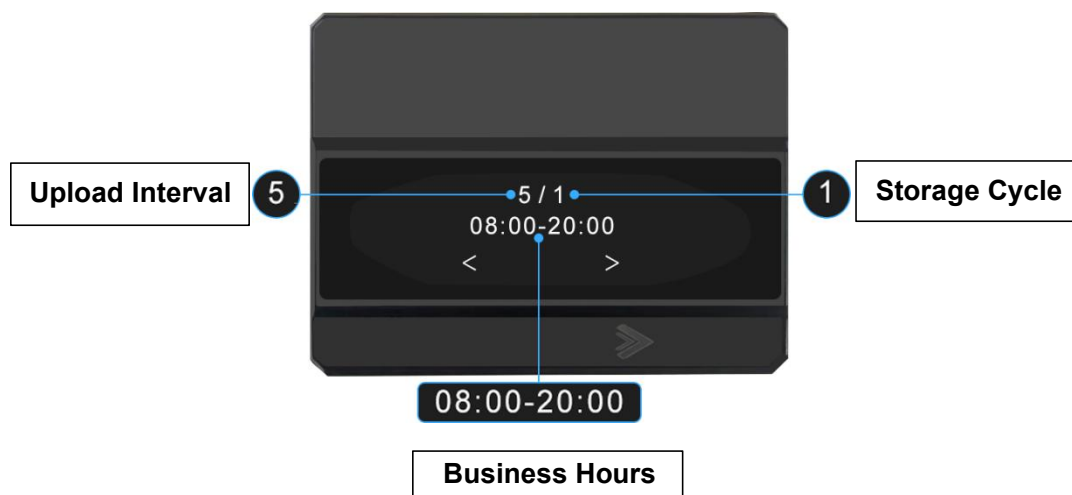
- **Online:** Device networking is normal, and the communication with the server is normal
- **Offline:** The server returns to an offline state
- **Exception:** the network exception fails to connect to the server, or touch the button to interrupt the device upload when reporting

**(6) Upload Intervals and Business Hours:**

This page views the device's upload intervals, storage periods, and business hours.

⚠ **Count in business / Non-working time is not counted.**

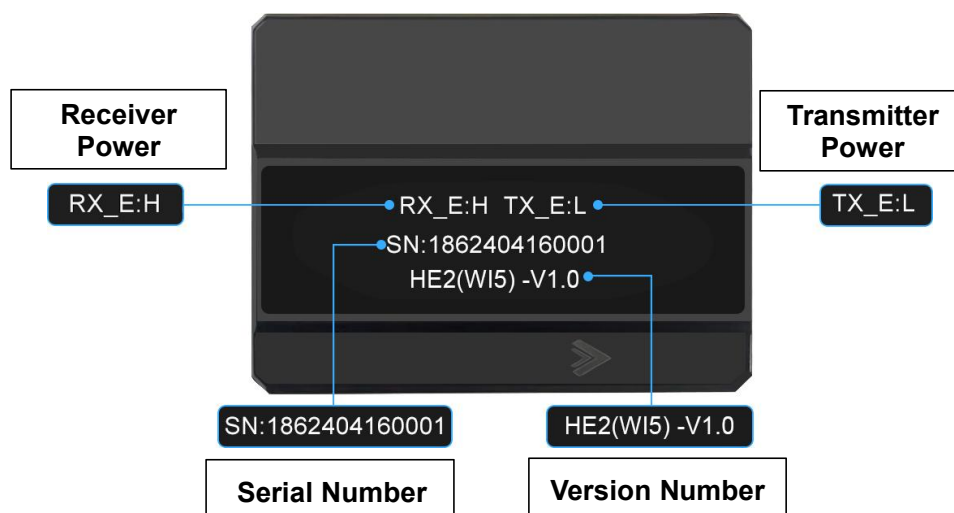
⚠ **The storage period setting cannot be greater than the upload interval.**



Name	Explain
<b>Upload Interval</b>	In minutes; 5 means that the upload interval is 5 minutes Can set the upload interval: 1 minute ~1440 minutes
<b>Storage Cycle</b>	In minutes, and 1 represents a storage period of 1 minute Storage cycle setting: 1 minute to 1440 minutes
<b>Business Hours</b>	<b>08:00-20:00:</b> Indicates that the device is counted normally during this time, but it is not counted outside this time
* All of the above Settings are operated on the cloud platform, and the final server distribution will prevail	

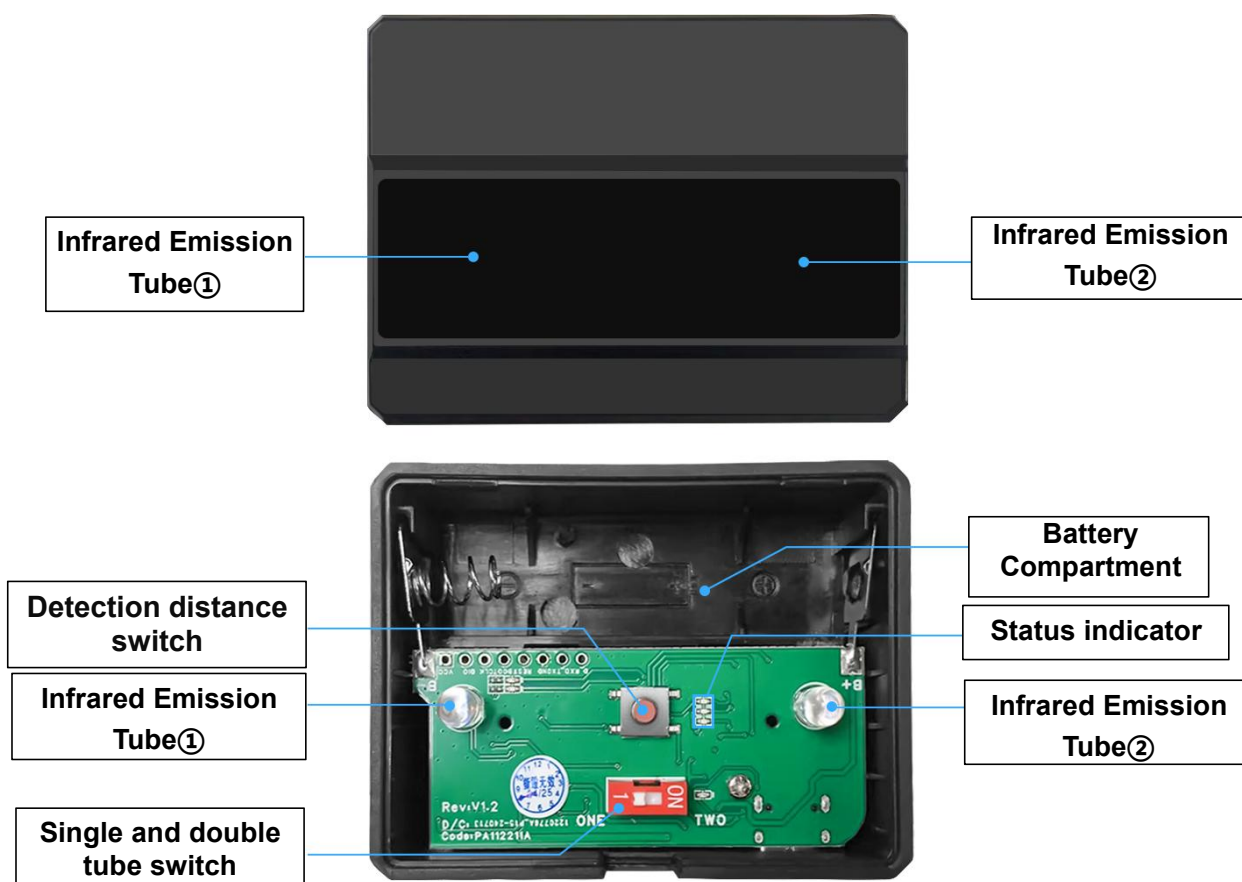
**(7) Basic Information:**

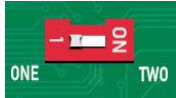

- 1、 Device battery power is high, low display
- 2、 Equipment SN (serial number)
- 3、 Device firmware version number



Name	Explain
Receiver Power	State: <b>RX_E: H</b> /High power RX_E: L / Low power ( <b>Need to charge</b> )
Transmitter Power	State: <b>TX_E: H</b> /High power TX_E: L / Low power ( <b>Need to charge</b> )
Version Number	Unique ID code for this device

### 2.4.3 Product Transmitter



Name	State	Explain
Single and double tube switch		<p>Single-tube and double-tube modes can be switched:</p> <p>(1) Single tube mode: infrared emitting tube ① works, infrared emitting tube ② does not work; Setting method: turn the switch to the digital 1 (ONE) terminal</p> <p>(2) Dual tube mode : infrared emitting tubes ① and ② work simultaneously; Setting method: turn the switch to ON ( TWO)</p> <p><b>⚠ The dual-tube mode consumes more power and is more accurate; the single-tube mode consumes less power and has a longer battery life.</b></p>
Detection distance switch		<p>Adjust the detection distance of the device and switch between the three detection distances of far, medium and near with the button; <b>in single-tube and dual-tube modes, the three detection distances of far, medium and near are adjustable.</b></p> <p>(1) Long distance : short press the button, all three status indicators light up Indoor detection distance: 1-12 meters; outdoor detection distance: 1-8 meters</p> <p>(2) Middle distance : Short press the button, 2 status</p>

		<p>indicator lights will light up</p> <p>Indoor detection distance: 1-8 meters; outdoor detection distance: 1-6 meters</p> <p>(3) Close distance : Short press the button, and one status indicator light will light up.</p> <p>Indoor detection distance: 1-4 meters; outdoor detection distance: 1-2 meters</p> <p><b>⚠ The longer the distance, the faster the power consumption</b></p>
Infrared Emission Tube	*	Transmit infrared wireless signal

**\* The device is shipped in dual-tube mode with medium distance. If there is no special requirement, please do not adjust it.**

## 3. Networking Configuration

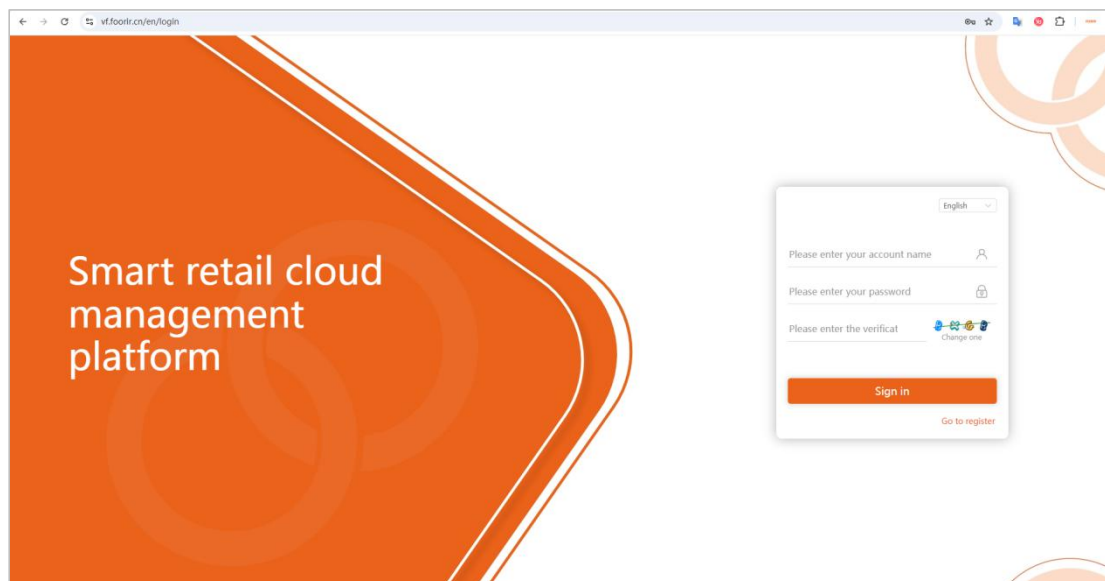
### 3.1 Configuration Notes

- ❖ **Network configuration: It consists** of web page network configuration and mobile phone network configuration.
- ❖ Perform networking configuration before device installation
- ❖ Before configuration, you need to go to the web page to bind the device. **For specific steps, refer to the web page network configuration**
- ❖ configuring mobile phone network , you need to fill in the accurate server address and port
- ❖ If the device is pushed to a third-party server, please skip the web configuration step

**⚠ If there are any rules, restrictions, or DNS-related settings on the network , the device may not be able to successfully connect to the server.**

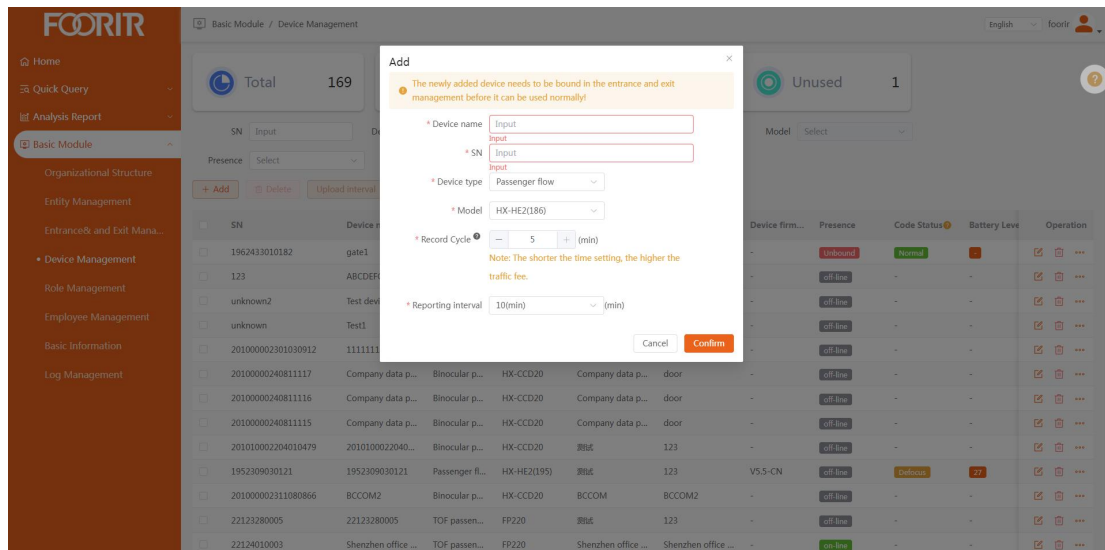
### 3.2 Web Page Networking Configuration

**Step 1:** Visit the cloud platform **vf.foorir.com** to register an account.



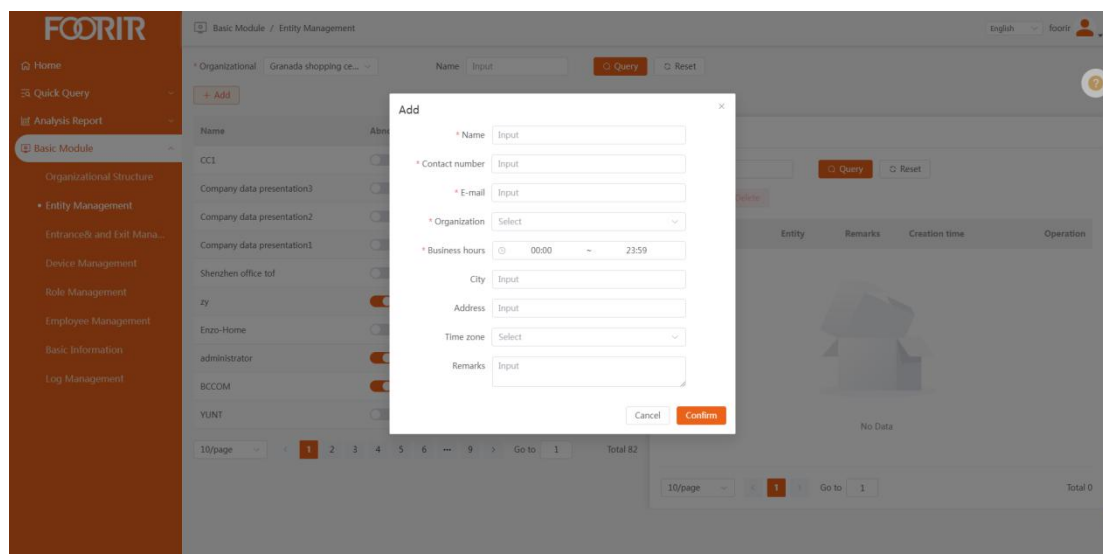
**Step 2: Add a device**, select "Basic Module- > Device Management- > Add Device"

- ⚠ The device name is recommended to fill in the device installation location
- ⚠ The serial number is the unique identification code of the device and must be filled in strictly according to the serial number displayed on the device
- ⚠ Check the serial number : refer to < **Basic information of the device** > and the label on the back of the receiver.



**Step 3: Create an entity** , select "Basic Module- > Entity Management- > Add Entity"

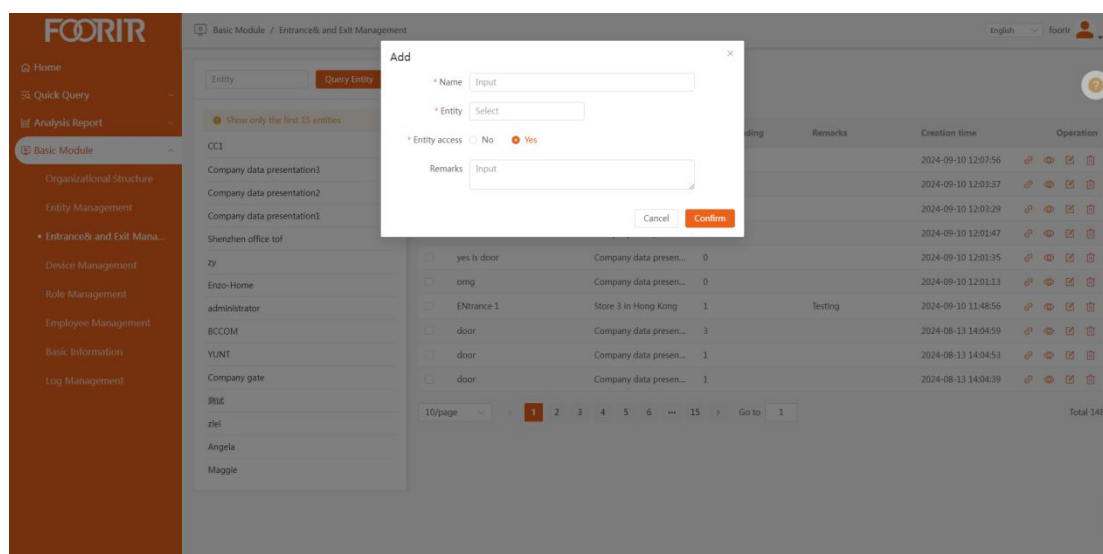
- ⚠ Email: used to push abnormal status of the device
- ⚠ Organizational structure: Select the default structure
- ⚠ Business Hours: Used to synchronize device working hours, counted during business hours and not counted outside business hours.
- ⚠ Time zone: used to synchronize device time. It is selected according to the local time zone.



**Step 4.1: Create an entrance and exit**, select "Basic Module- > Entrance and Exit Management- > Add Entrance and Exit"




⚠ **Belonging entity:** Select the created entity

⚠ **Physical entrance and exit:** Select "Yes"

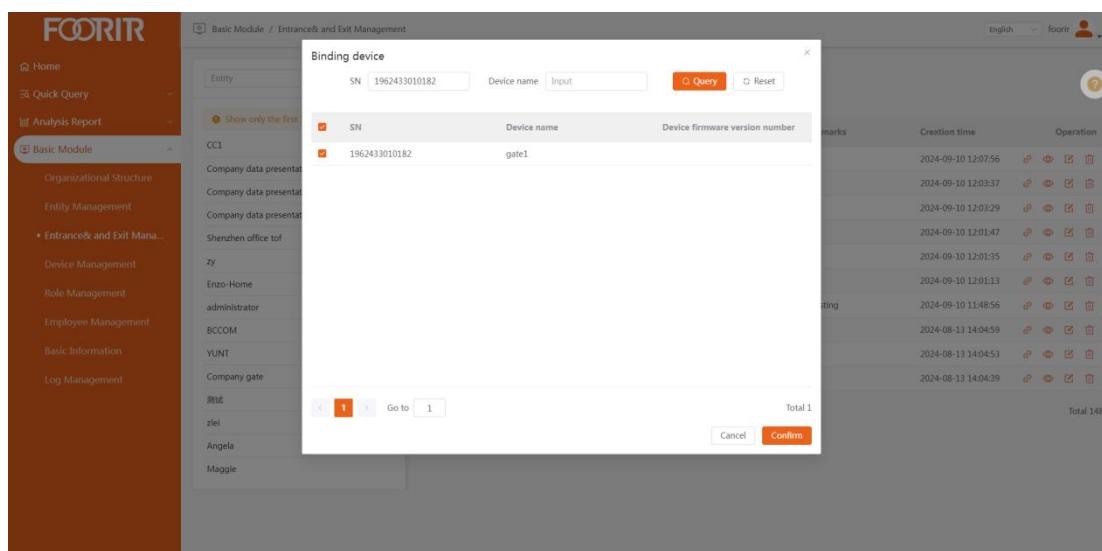


**Step 4.2: Bind the device**, select the entrance and exit to be bound, click the binding icon at the back, enter the binding page, check the device to be bound, and click "Confirm"; the web networking configuration is completed.

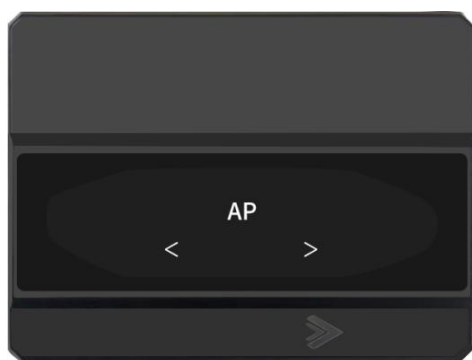
⚠ **After completing this step, you can configure the mobile phone network.**

<input type="checkbox"/>	Name	Entity	Device binding	Remarks	Creation time	Operation
<input type="checkbox"/>	A	CC1	1		2024-09-10 12:07:56	  





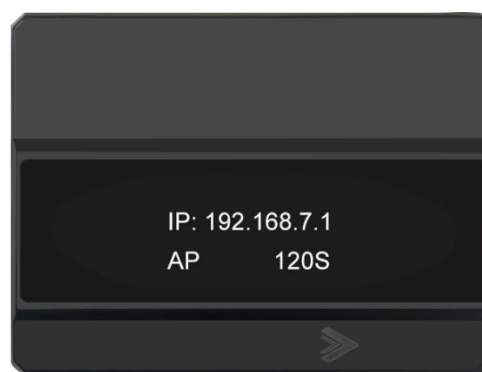
### 3.3 Mobile Phone Networking Configuration



**Step 1:** Short press the receiver button to switch the page to "AP", and long press the button to start the AP

**!** When touching the button, the blue indicator light is on, but the page does not respond. The device is uploading data. Please wait a moment before touching the button.

**Step 2:** Long press the button to start the AP and open the hotspot of the device.



**Step 3:** Turn on WiFi on your phone and search for the device hotspot Foorir-xxxx (xxxx is the last four digits of the device serial number as shown in Figure 1)

**⚠** This WiFi is the hotspot of the device. If there is no network, some mobile phones will pop up a window as shown in Figure 2. **Click "Trust this network"** (If you click "Disconnection", the mobile phone will automatically disconnect from the hotspot and cannot enter the configuration page)

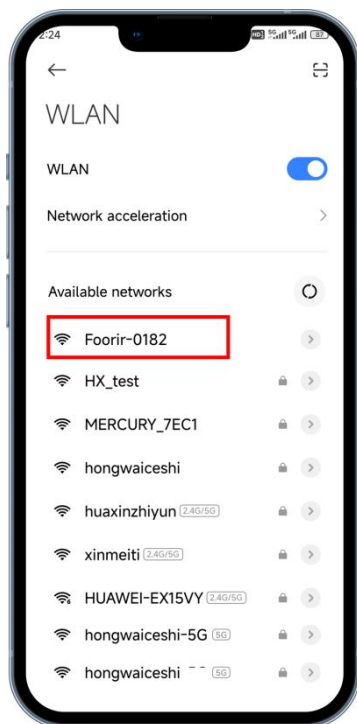


Figure 1

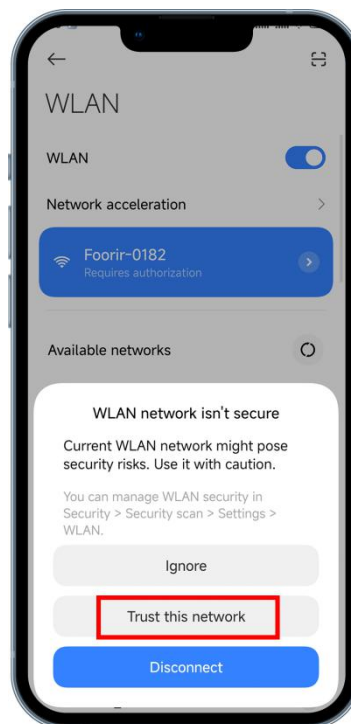


Figure 2

**Step 4:** After connecting to the device's hotspot, the phone will automatically jump to the configuration page and enter the login password: 123456.

**⚠** Some mobile phones cannot jump automatically. You can use the mobile browser to enter the IP address: 192.168.7.1, access the configuration page, as shown in Figure 2, and enter the login password: 123456 ( **Do not enter this step in the search box** ).

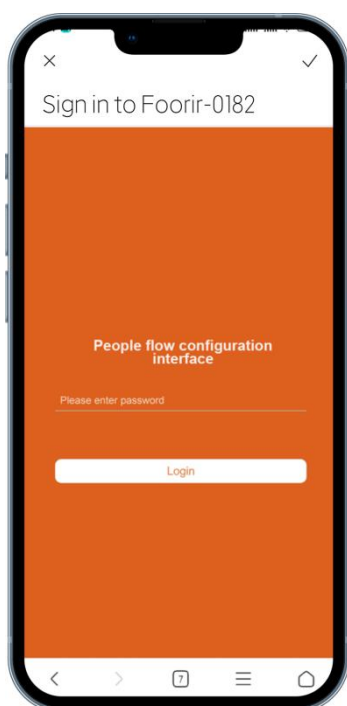


Figure 1

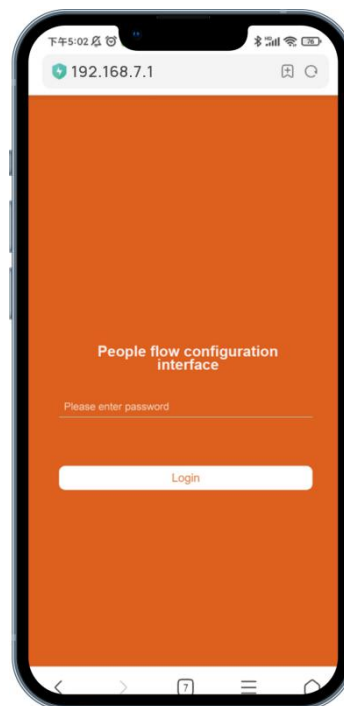


Figure 2

**Step 5:** After entering the configuration page, configure the device with the available WiFi on site. In the WiFi settings, click "WiFi Search" to search automatically, select the available WiFi and enter the password manually. If it cannot be found, you can manually enter the WiFi name and password. Next, in the server settings, enter the target server address and port number, confirm that the WiFi name, password, server address, and port are correct, and click "OK".

⚠ **Server address: op.foorir.com, port number: 8089**

⚠ **The server address here is slightly different from the domain name "vf.foorir.com" for accessing the cloud platform**



**Step 6:** After clicking Confirm, the configuration page prompts "Setting Successful", indicating that the setting is complete.

⚠ **After the settings are completed, the phone will disconnect from the device hotspot, but no operations can be performed on the page (as shown in Figure 2). To reconfigure, you need to repeat the phone network configuration operation.**

⚠ **Device time, business hours, upload interval, etc. cannot be set on this page and can only be set in the cloud platform**

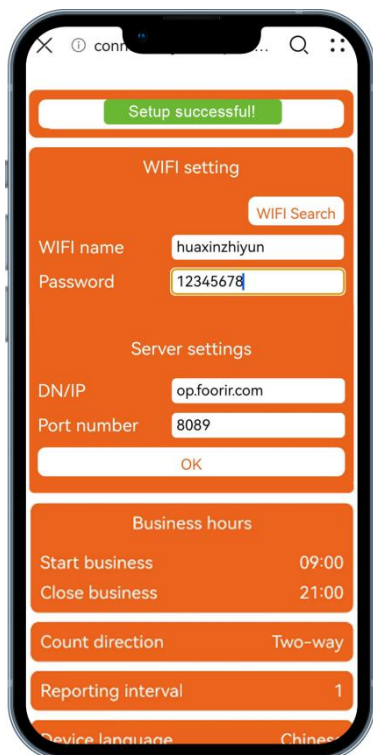


Figure 1

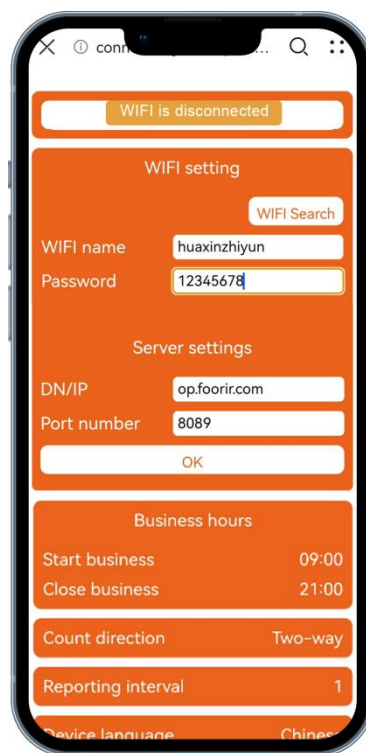
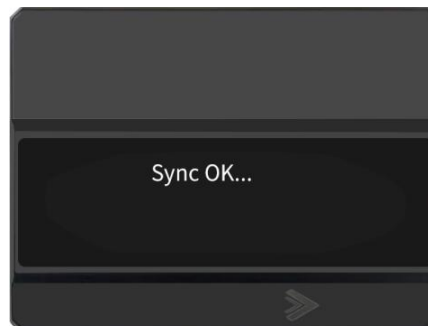
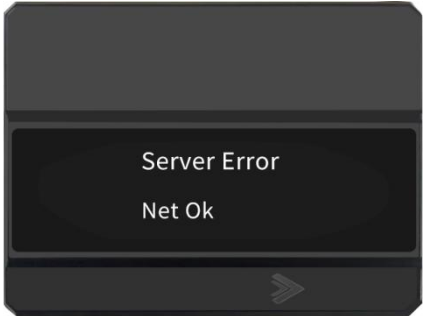
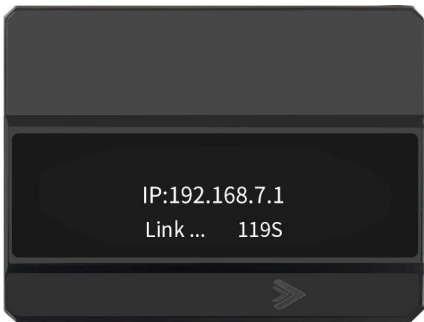


Figure 2

**Step 7:** Observe the prompt on the device. If the status shows **Sync Ok**, the setting is successful. At this time, the device time is synchronized with the server time, and the server status is **online**.



**Note:** After the mobile phone is connected to the Internet, the following states may appear on the device display:

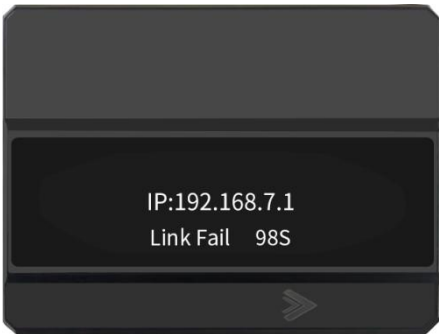


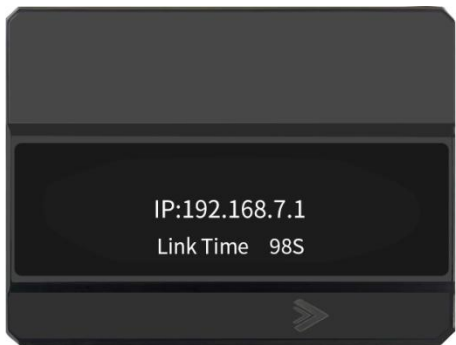
**(1) Server Error:** The server has returned an error state

Check whether the device is successfully bound on the cloud platform

**(2) Link Fail: WiFi connection fail**

Check whether the WiFi name and password are wrong; or if the WiFi is not available, please replace the other available WiFi



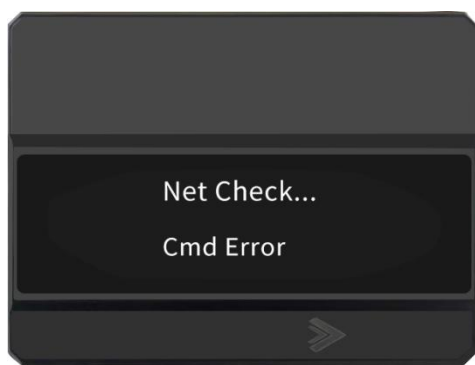
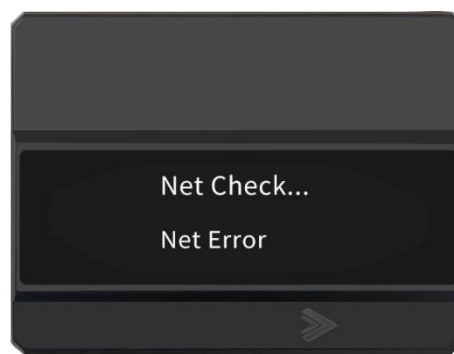


**(3) Link Time:** The device successfully connected to WiFi but was not assigned to the IP address, or the WiFi connection timed out

Check whether the WiFi can connect to and access the Internet normally

#### (4) **Net Error: Network error**

Check whether the router is connected to the Internet, whether the server domain name is normal, and whether the port is normal



#### (5) **Cmd Error: Module error**

Please contact your supplier in time

## 4. Installation Instructions

### 4.1 Installation Instructions

- ❖ At the installation location, first configure the network and then install the device
- ❖ The receiving end is installed on the right hand side of the channel entrance direction
- ❖ There should be no obstructions between devices. If there is glass, the higher the light transmittance, the less impact it has on accuracy.

### 4.2 Installation Height

⚠ The recommended installation height is 1-1.2m, and the receiving end and the transmitting end should be installed parallel and aligned.

⚠ The best detection area for infrared people is from hip to shoulder, which is calculated based on the international body proportion of 0.618.

Infrared People Counter - Recommended Installation Height		
Pedestrian Height (m)	Best Detection Body Part (m)	Recommended Installation Height (m)
1.4-1.6	0.87-1.29	1

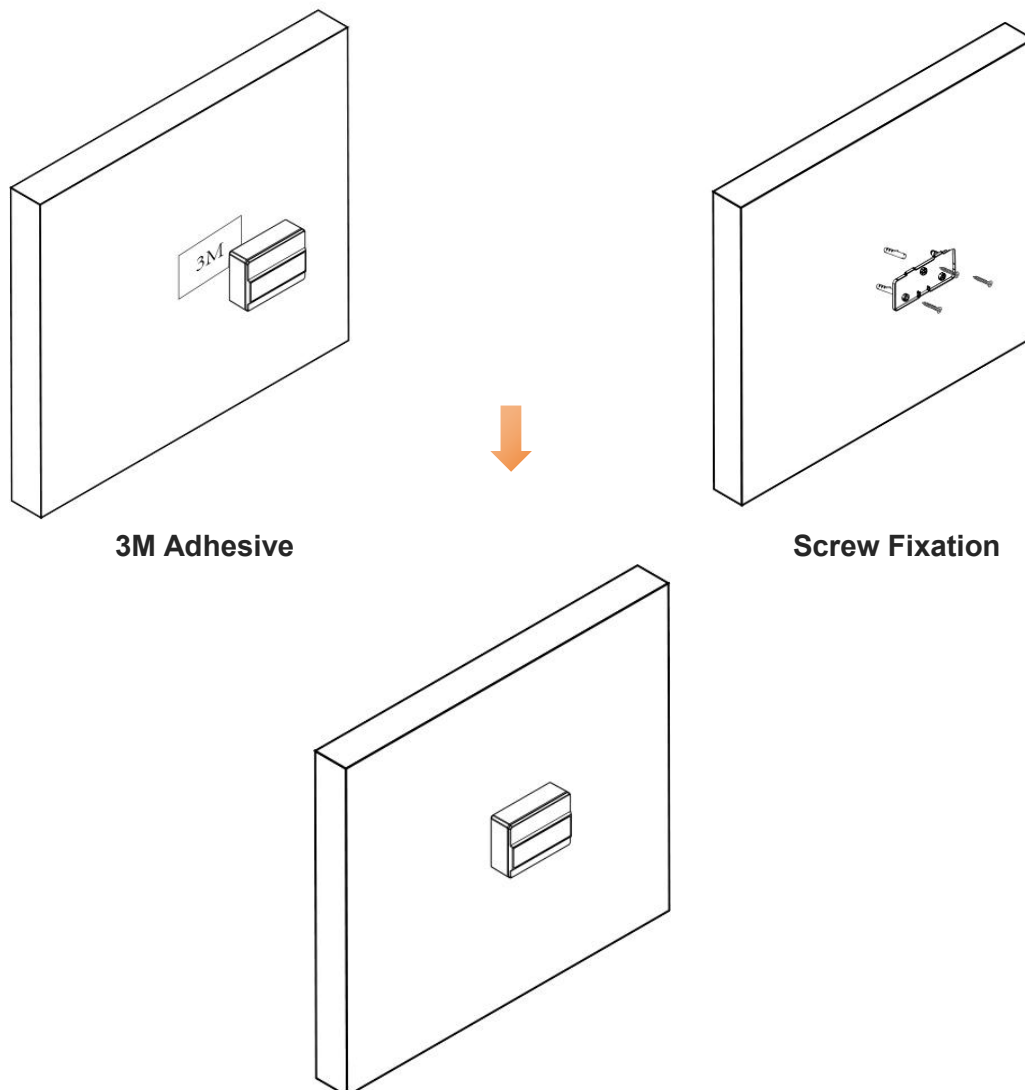
1.6-1.8	0.99-1.46	1.2
1.8-2.0	1.16-1.54	1.35
2.0-2.2	1.24-1.66	1.45

### 4.3 Factors Affecting Accuracy

- ❖ There should be no other infrared devices near the device, as they will interfere with each other.
- ❖ The devices cannot be blocked by people or objects for a long time, which will cause the devices to lose focus.
- ❖ If two people pass side by side, there will be omissions.
- ❖ If you hold a large object or push a shopping cart through, there is a chance that it will be recorded incorrectly.

### 4.4 Installation

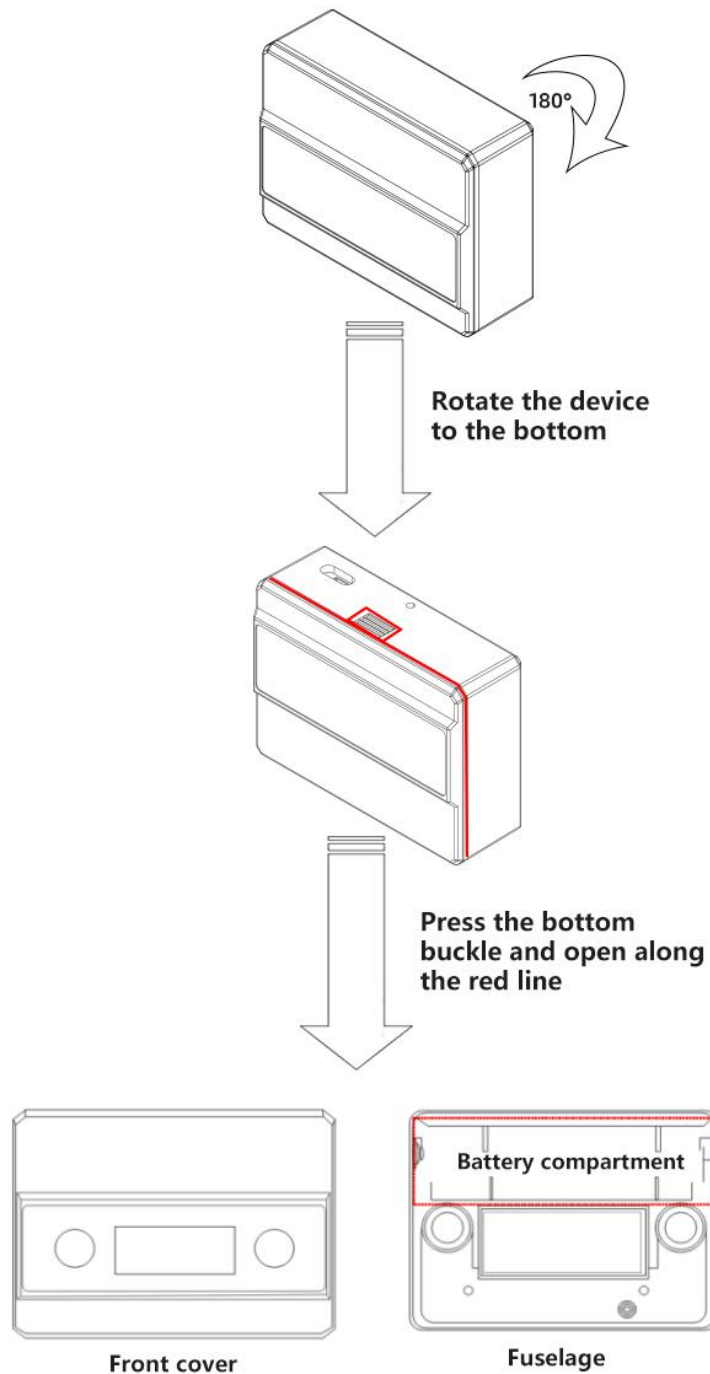
Two installation methods: 3M adhesive or screw fixation



## 5. Installation Steps

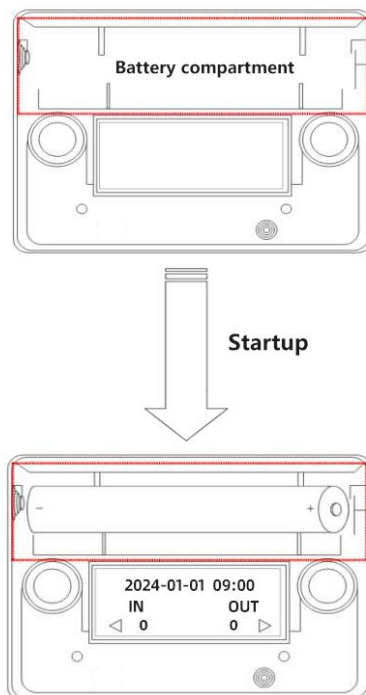
### 5.1 Installation Method 1

**Step 1:** Press the bottom buckles of the infrared people transmitter and receiver , and disassemble them along the seams as shown in the figure.

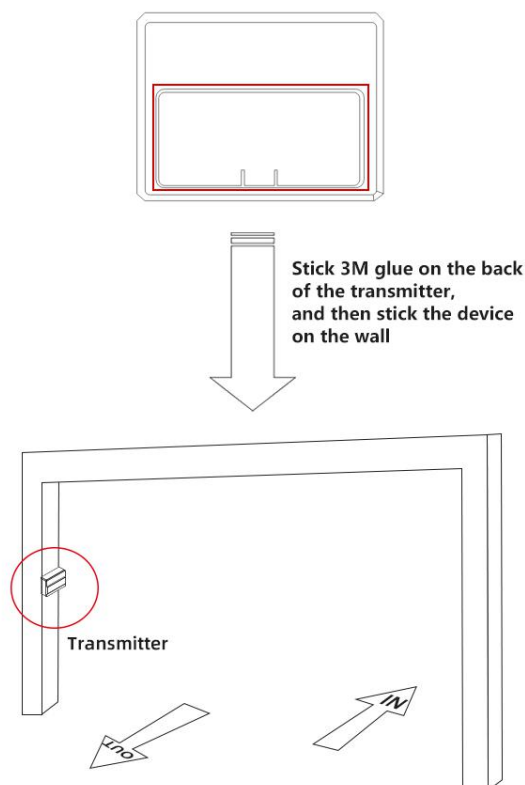




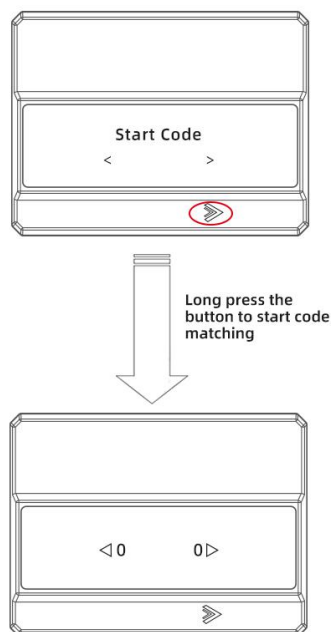
**Step 2:** Install the battery in the battery installation area as shown in the picture, and start the device .



**Step 3:** First install the transmitter to facilitate the receiver to pair. Take out the 3M adhesive from the packaging box, stick the tape on the back of the device first, and then fix the transmitter on the left side of the door .

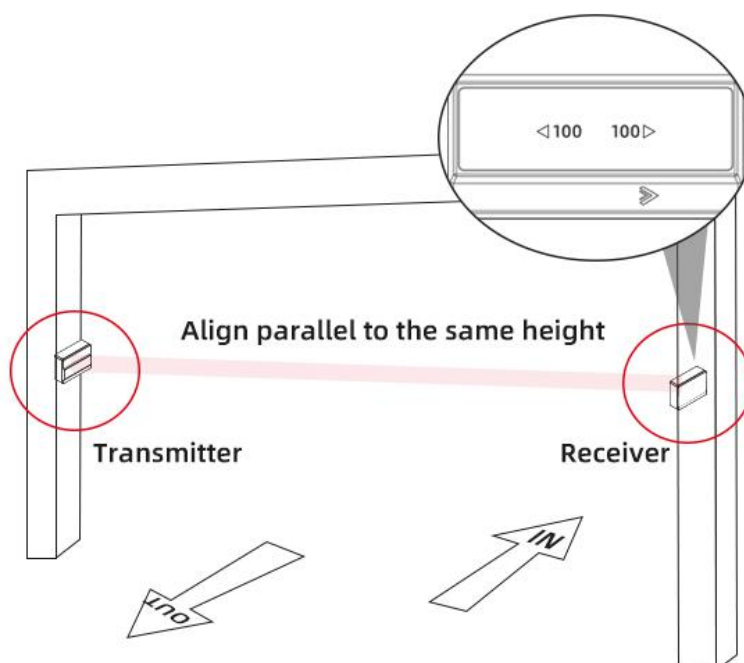


**Step 4:** For pairing operation on the receiving end, short press the button on the receiving end to switch to the "Pairing" page, and long press the button to start pairing.



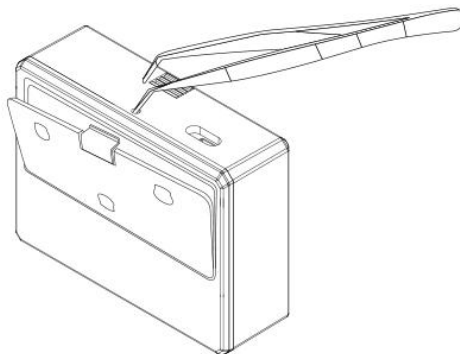
**Step 5:** Perform the code matching at the preset installation position, align the receiver and transmitter parallel to each other, wait for the code matching, and automatically jump to the main page after 100% successful matching. Then stick the receiver on the wall.

**⚠** If there is a deviation in the code pairing, please make slight adjustments left and right until the code pairing is successful.

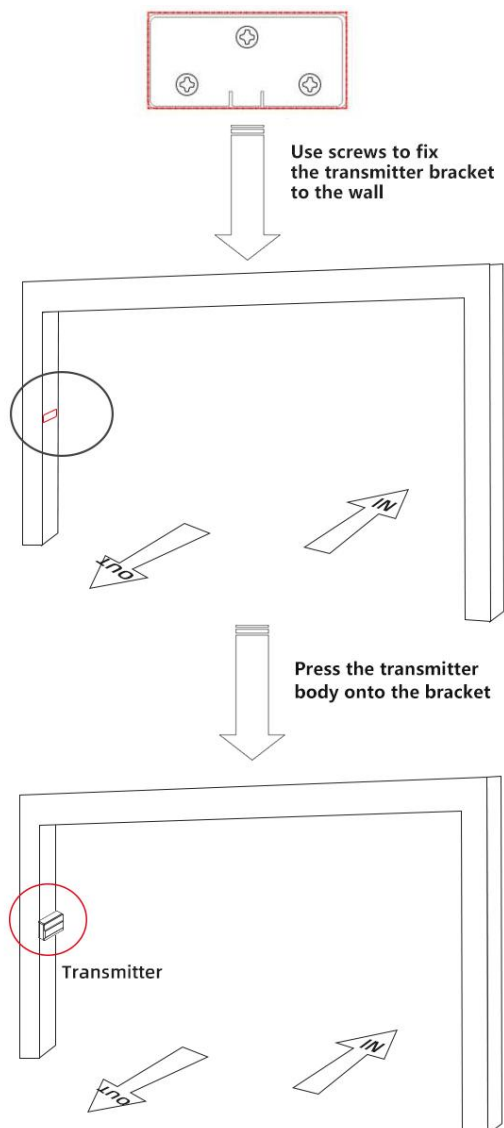


## 5.2 Installation Method 2

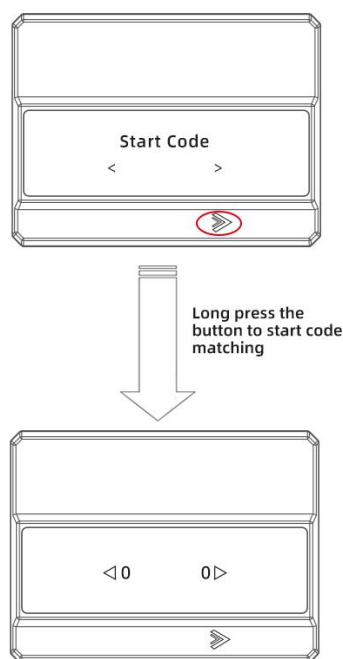
**Step 1:** Use tweezers or other sharp objects to push the device bracket out through the small hole at the bottom .



**Step 2:** Use screws to fix the transmitter bracket to the wall, and then press the transmitter body onto the bracket to fix it.



**Step 3:** For pairing operation on the receiving end, short press the button on the receiving end to switch to the "Pairing" page, and long press the button to start pairing.



**Step 4:** Binding is performed at the preset installation position. Align the receiver and transmitter in parallel and wait for the matching. After 100% successful matching, it will automatically jump to the main page. Keep still, mark the final installation position of the receiver, fix the receiver bracket with screws according to the marked points, and then press the receiver body onto the bracket.

**⚠** If there is a deviation in the code pairing, please make slight adjustments left and right until the code pairing is successful.

