

SenseTime

SenseStorm 2.0 User Manual

(English Version)

www.sensetime.com

PRODUCT
MANUAL



Directory

1. Getting to Know SenseStorm

- 1.1 List of Items
- 1.2 Product Overview
- 1.3 List of Remaining Components
- 1.4 Product Specifications

2. How to Safely Operate SenseStorm

3. Operation Guide

- 3.1 Software Installation
- 3.2 Battery Installation and Charging
- 3.3 Accessories
 - 3.3.1 Sensor Connection
 - 3.3.2 Motor Connection and Use
 - 3.3.3 Audio Connection and Use
- 3.4 Switch On
- 3.5 Shutdown
- 3.6 Introduction of Function Modes
 - 3.6.1 Teaching Mode
 - 3.6.2 Connection Mode
- 3.7 Key Operation and Quick LED indicator
 - 3.7.1 Key Operation Correspondence Table

4. How to Clean SenseStorm

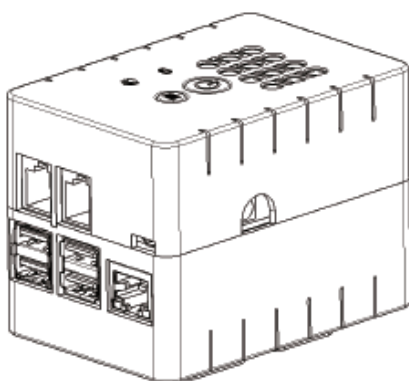
5. Common Errors and Solutions

1. Getting to Know SenseStorm

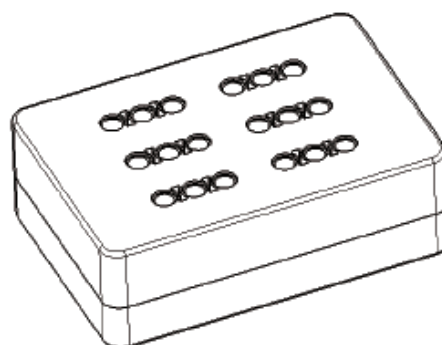
1.1 List of Items

- Main Control Board ×1
- Battery ×1
- Power Charging Cable ×1
- Ultrasonic Sensor ×1
- Color Sensor ×1
- Speaker ×1
- Speaker Charging Cable ×1
- Audio Cable ×1
- Camera ×1
- Instruction Manual ×1
- TF card ×1

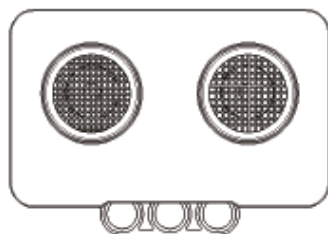
Main Control Board



Battery



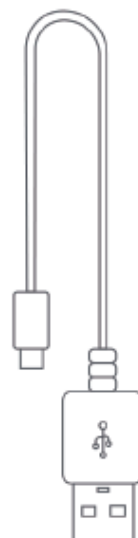
Ultrasonic Sensor



Speaker



Speaker Charging Cable



Audio Cable



Color Sensor



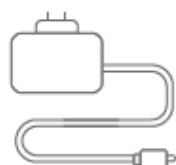
TF Cable



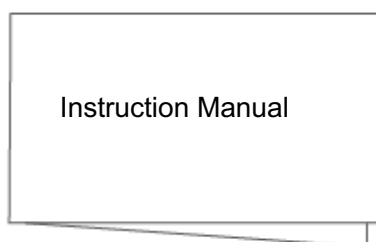
Camera



Power Charging Cable



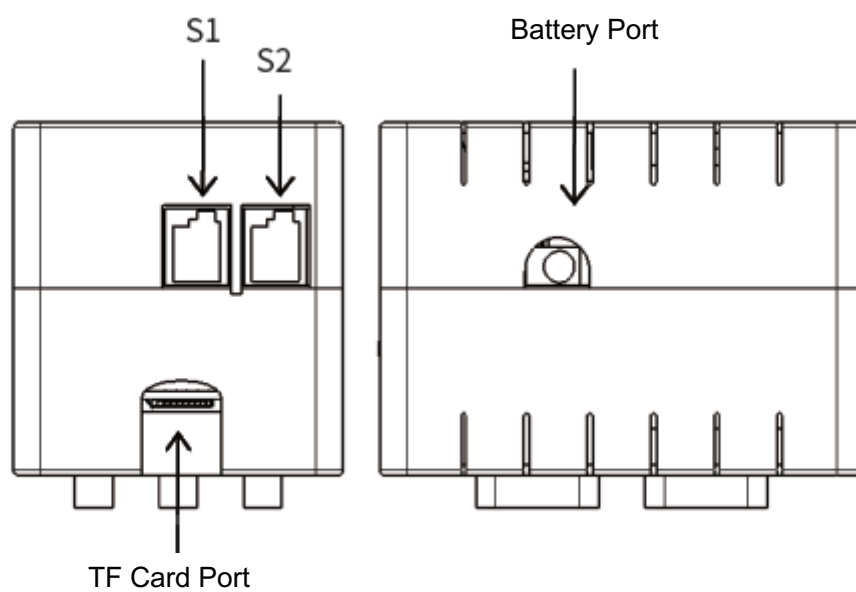
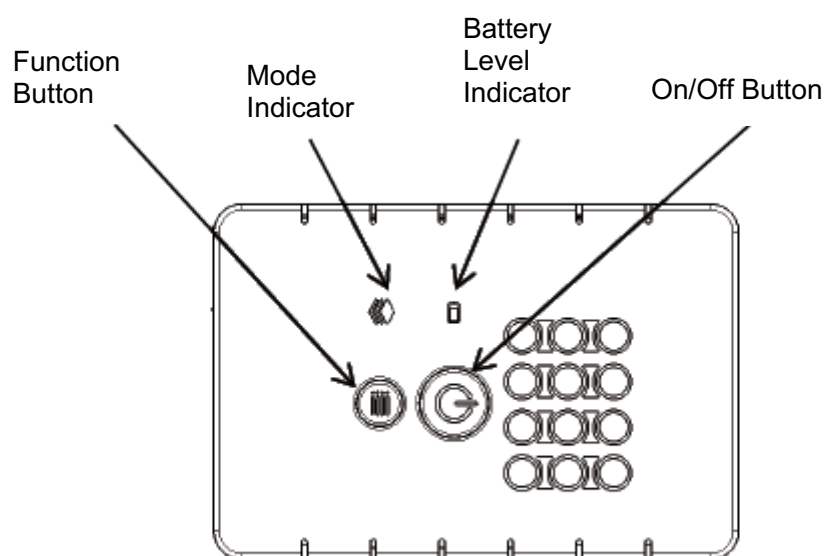
Instruction Manual



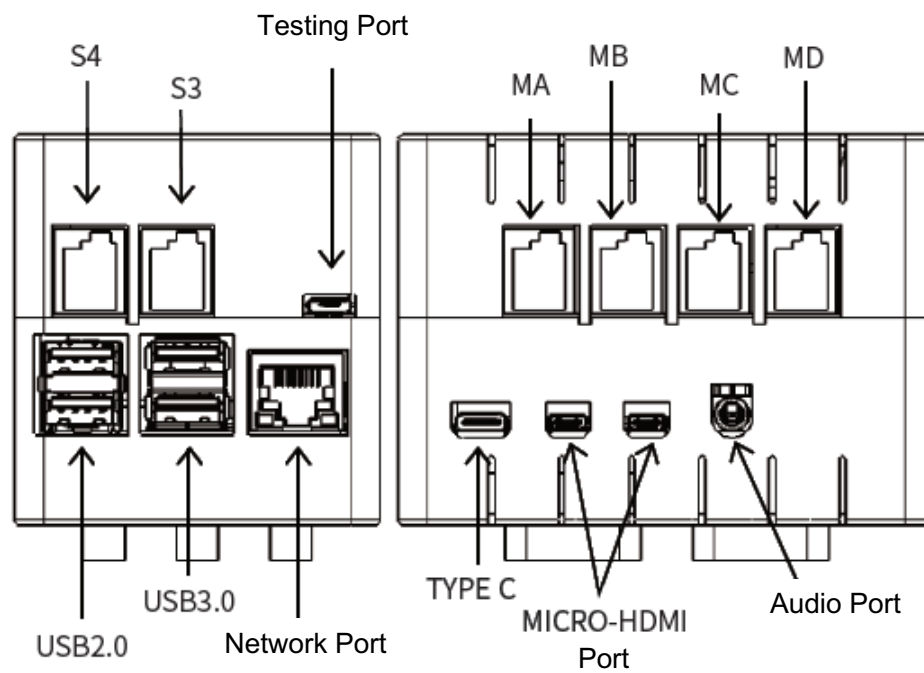
Assembly Guide

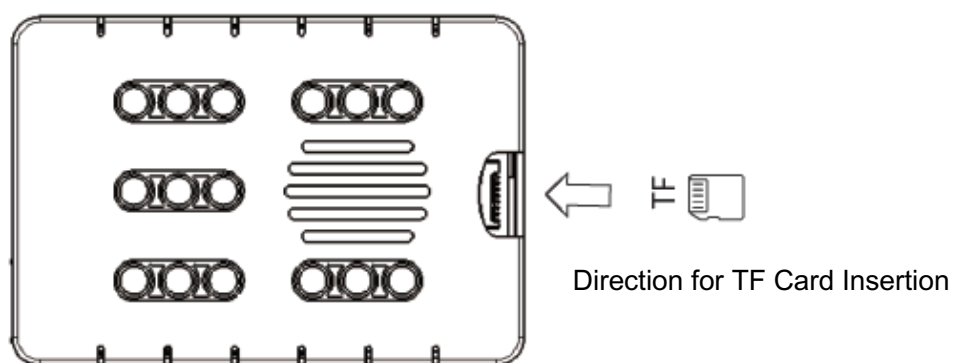
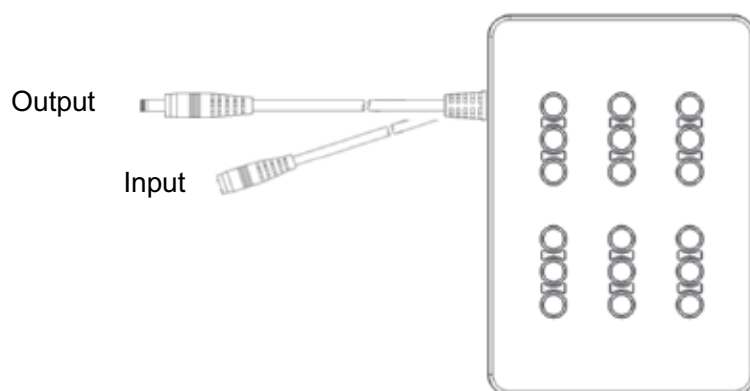


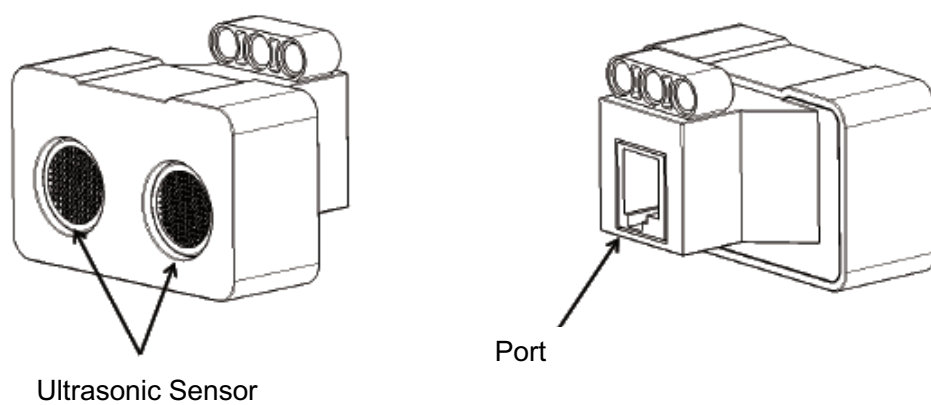
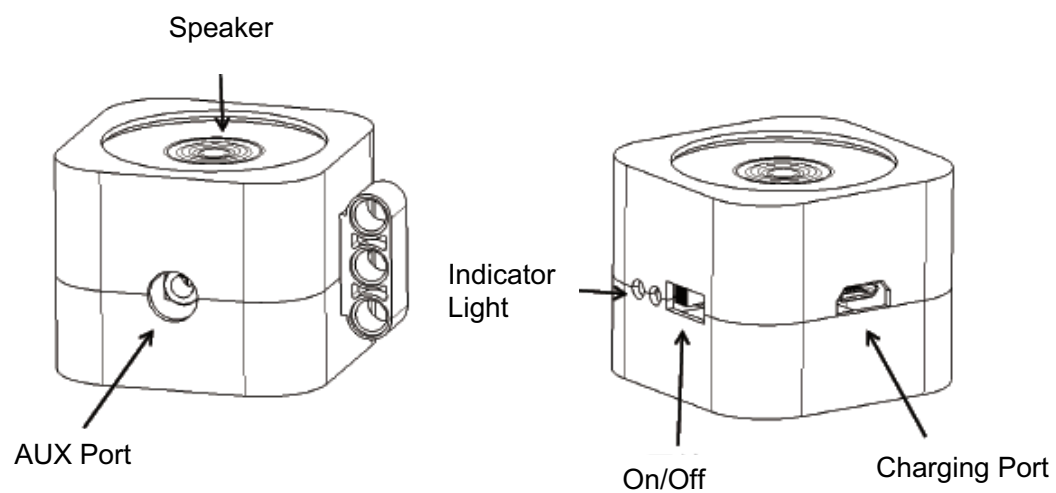
1.2 Product Overview

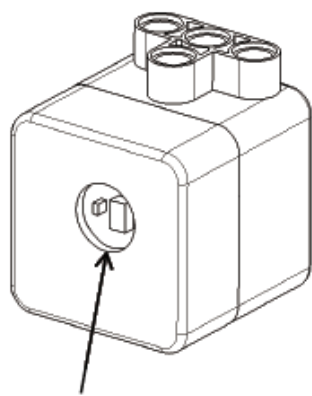


Testing Port is only reserved for developers to use.

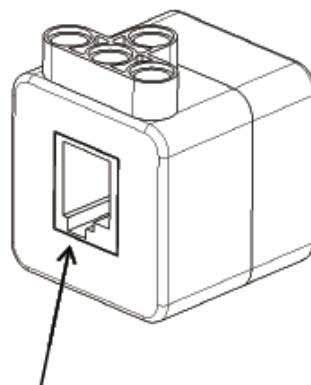






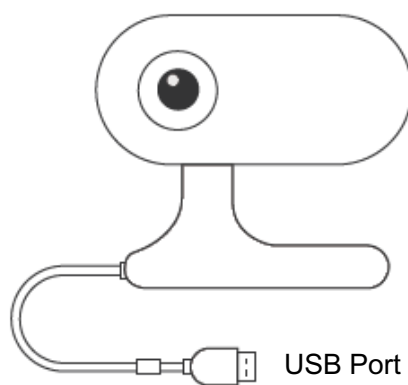


Color Sensor



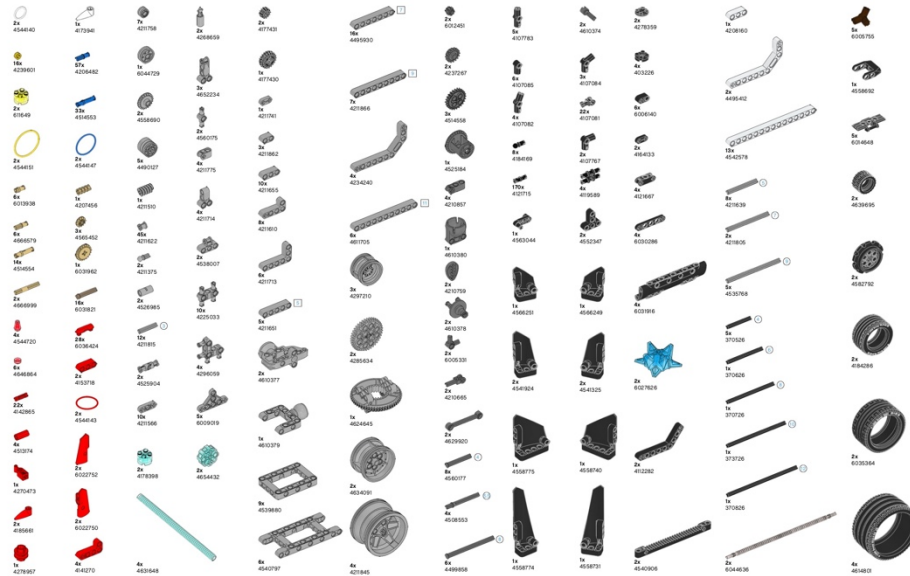
Port

Camera



USB Port

1.3 List of Remaining Components



1.4 Product Specifications

	Specifications
FUNCTION	With motor and building blocks for face recognition and gesture recognition, human tracking and other artificial intelligence courses
SIZE	92 × 62 × 73mm
CPU	Raspberry Pi 4, 2G
POWER SUPPLY	3000mAh, 12V output
USAGE TIME	2 hours
INTERFACE	USB × 4 HDMI × 1

	DC Power Supply × 1 Audio Interface × 1 Crystal Head Interface × 8 (Can Be Connected to 4 Motors and 4 Sensors) Gigabit Ethernet Port × 1 Micro USB × 1 (for Arduino Firmware Upgrade)
SENSOR	Color sensor × 1 / Ultrasonic sensor × 1
MOTOR	Medium and Large Motor provided from the given building blocks
MAIN CONTROL BUTTON	On/Off Switch Button × 1 Function Button × 1
LED	RGB Light × 2 Red and Green Double Color Light × 1
CONNECTING CABLE	Micro USB 0.5m × 1 3.5 to 3.5 AUX Audio Cable 0.6m × 1

2. How to Safely Operate SenseStorm

Please read the following information carefully and understand that SenseTime will not be responsible for liabilities including any direct or indirect damage caused by improper use.

1. Do not put your hands or any foreign objects on the air outlets of the upper and lower fans of the SenseStorm main control to avoid damage to the product due to overheating.

2. Do not use the Type C interface to supply power to the master!
Supplying power through this interface for a long time may cause circuit damage.
3. Mixed use with other types of batteries is prohibited. When the battery is about to run out, please charge it as soon as possible. At the same time, in order to prevent the battery from being over-discharged because of long-term unused, the battery should be charged regularly to maintain the power, and it is recommended to charge it once a month.
4. Please use the special adapter and cable that comes with the product for charging.
5. The normal working environment temperature of SenseStorm is 5-35°C, and the humidity is 20~60% RH. Please keep away from open flames and heat sources and avoid direct sunlight for a long time; do not cover the sensor, otherwise it will affect the normal operation of the sensor.
6. If SenseStorm does not operate normally, such as making unusual sounds, smells or smoke, please unplug the data cable, turn off the power supply and contact customer service immediately. All maintenance activities should be carried out under the guidance or supervision of technicians.

3. Operation Guide

3.1 Software Installation

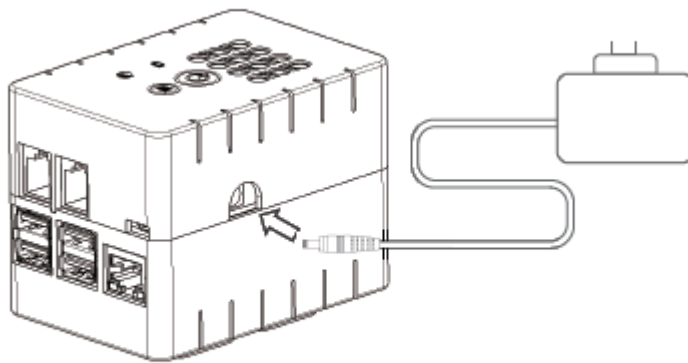
Please log onto <https://lab.cuhkjc-aiforfuture.hk/download> to install the SenseStorm software tool.

- ✧ Download the **Robot Assistant** mobile application on a mobile device for the control kit to connect to the designated network.
- ✧ Download the **SenseTime Edu (PC Client)** on a computer for the PC-

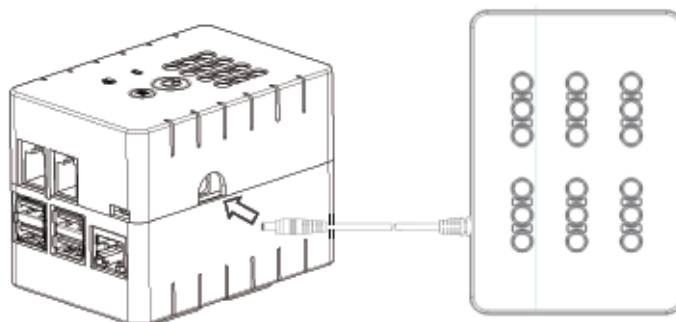
side educational robot to be connected to SenseStudy for tasks involving data transmission.

3.2 Battery installation and charging

- ✧ The DC connector of the SenseStorm main control can supply power to the main control, and the usage time is about 2 hours. If SenseStorm is needed to be used for a long time, you can also directly connect the male connector of the power charger to the DC port of the main control board to maintain continuous power supply.



Connecting charger to Main Control Board



Connecting battery to Main Control Board

- ✧ The battery indicator on the main control of SenseStorm will indicate

the battery level through changes in colors for the blinking lights.

- ✧ If the battery is fully charged, the battery indicator light turns green.
- ✧ When the battery is low, the battery indicator light turns red. The buzzer will produce an alert tone when the battery is about to run out.
- ✧ It is recommended when the battery charge indicator lights red off as soon as possible. The charger can be inserted into the female head of the battery box to charge the battery. The indicator light on the power charger will indicate the charging status. When the indicator light on the charger is red, it means that it is charging; and when it is green, it means that the charging is complete.

3.3 Accessories

3.3.1 Sensor Connection

- ✧ Color and ultrasonic sensors can be connected to any port (S1-S4).
- ✧ In the experiment, you are required to specify a specific port to obtain sensor data.

3.3.2 Motor connection and use

- ✧ Motor can be connected to any port of **AD (MA-MD)**.
- ✧ In the experiment, you need to use the specified port to get the sensor data. The port also supports Lego's native large-scale motor and medium-sized motor.

3.3.3 The connection and use of the audio

- ✧ The provided charger is required for regular charging. When using the audio, please connect the audio cable to the audio port of the main control board and turn on the audio switch.

3.4 Switch On

- ✧ Press and hold the power button on the SenseStorm main control once to enter the power-on state. Once the battery indicator lights

up, the current battery status will be displayed. It takes about 40 seconds and once the mode indicator on the main controller lights up blue, the booting process is complete.

3.5 Shutdown

- ✧ Press and hold the power button on the SenseStorm main control board for 5 seconds, the battery indicator will turn off, and the shutdown is complete.

3.6 Switching Modes

3.6.1 Introduction of Function Modes

Mode	Function
Teaching Mode	The teaching mode will be entered by default when it is turned on. After connecting to the Wi-Fi network, it can be connected with the SenseStudy teaching platform.
Intelligent Network Configuration	In this mode, SenseStorm can be connected to WLAN to prepare for communication with the SenseStudy teaching platform.

3.6.2 Teaching Mode

When the teaching mode is turned on, and the blue light will become apparent with the voice alert message “Teaching Mode”.

- ✧ After completing the network configuration process, SenseStorm will automatically enter the teaching mode by default and the “Mode indicator” will switch to the blue light at this stage.
- ✧ Connect the PC to the same Wi-Fi network as SenseStorm and turn on **SenseTime Edu (PC Client)**.
- ✧ Log into SenseStudy to open SenseStorm related course packages.

- ✧ Click "Connect Hardware" in the upper right corner, check the corresponding ID of the fuselage, find the corresponding SenseStorm, and click to connect.
- ✧ To examine the SenseStorm course package, enter the code in the code area. Press and click "Run" to see SenseStorm takes corresponding actions.

3.6.3 Intelligent Network Configuration

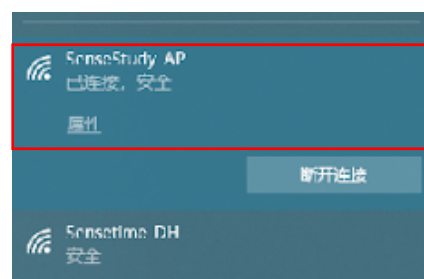
Plug the camera into any USB port, double-click the "Function Button", the "Mode Indicator" will flash color blue with the voice alert message "Network Configured" to enter the network configuration mode.

- ✧ Connect the mobile phone to an available Wi-Fi network, open the **Robot Assistant** mobile application, locate the word "SenseStorm", then generate a QR code and place the QR code in front of the SenseStorm camera. If the camera scans the QR code successfully, the alert message "Received Network Information" will be played.

- ✧ **As shown below:**



When the mobile phone is connected to the Wi-Fi network



When the PC is connected to the same Wi-Fi network

- ✧ The main control board will complete the network configuration, the voice will prompt the command "Connection Successful", and then the mode will return to the default teaching mode. The

terminal will display "Connection Successful". If the network configuration fails or the timeout returns, the voice alert message will play "Connection failed" and the mode will return to the network configuration mode. If you need to exit the network directly, press function button to switch back to the teaching mode.

- ✧ Note: Wi-Fi network connection can only support 2.4G frequency.

3.7 Key Operation and Quick LED indicator

3.7.1 Key Operation Correspondence Table

Function	Mode	Instruction
Power	On	Press On/Off Switch once
Power	Off	Press On/Off Switch for 5 seconds
Intelligent Distribution Network	Teaching mode	Double-click the function button

4. How to Clean SenseStorm

- Do not use abrasives, aerosols, or any other liquid wiper because these contain flammable substances may damage the plastic packaging.
- Do not use water or other liquid spray to drench the product.
- Please keep the sensor location clean and do not rub or cover the sensor.
- After power off, use a soft dry cloth to wipe the device clean.

5. Common Errors and Solutions

Common Error	Solutions
After pressing the power button, the blue light does not light up.	(1) Check the power supply (2) Check whether the TF card is inserted correctly
Mode switching is abnormal.	(1) Check whether the camera is connected (2) Check whether the motor port has been correctly assembled
Failure to connect to sensor	(1) Check whether the cable is plugged in (2) Check whether the port is correct.
Motor control fails	(1) Check whether the connection is plugged in (2) Check whether the port is correct and there is correct
No audio coming from speaker	(1) Check whether there is electricity (2) Check whether the audio switch is turned on (2) Check whether the connection is stable



WeChat ID



Weibo



Support Hotline