

1. Cover

Product Technical Specification

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3. General

- 3.1 This technical specification is applicable to household lock projects, internal project number: HFA1938, intelligent lock motherboard and accessories technical and related requirements, including technical indicators, functional design, performance, characteristics, structure, installation and testing requirements.
- 3.2 This technical specification puts forward the minimum technical requirements, does not stipulate all technical details, and does not fully quote the provisions of relevant standards and specifications. We should ensure that we provide high-quality products and corresponding services that conform to this technical specification and relevant industrial standards, and have complete functions and excellent performance. At the same time, it must meet the requirements of national mandatory standards and norms on safety and environmental protection.
- 3.3 All procedures, specifications and standards involved in the design and manufacture of our equipment must follow the latest version of China's national standards.
- 3.4 If the standards used in this technical specification are inconsistent with the standards implemented by the customer, they shall be implemented according to higher standards. At the same time, any standards and norms implemented shall not be lower than "The People's Republic of China national standards and norms".
- 3.5 Matters not covered in this specification shall be determined through negotiation between our company and the customer during the technical negotiation of the contract.

4. Purpose

- 4.1 Clarify the use environment, use and scope of application of the product;
- 4.2 Clarify product technical requirements and main specifications and parameters;
- 4.3 Define the main functions, performance parameters and applicable objects;
- 4.4 Describe the product system composition and design outline;
- 4.5 Definitions stipulate manufacturing, inspection, testing standards and programs.

5. Relevant standards cited

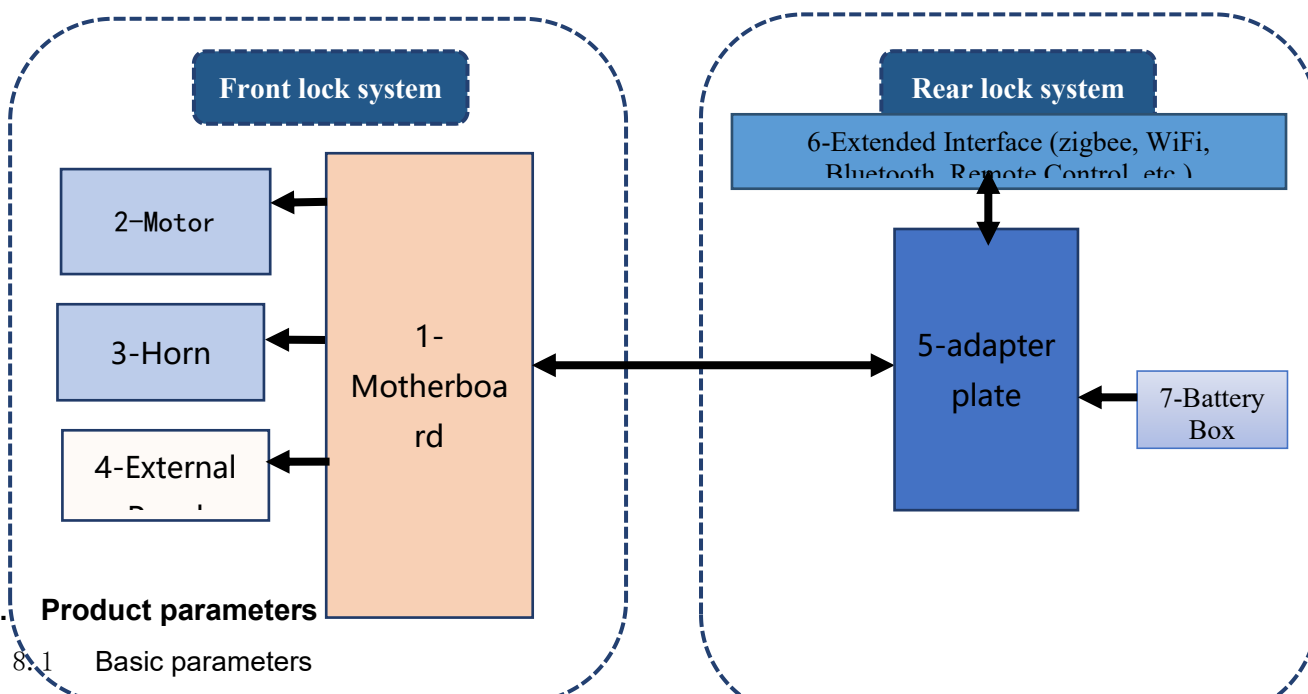
- 5.1 GA 374-2019 "Electronic Anti-theft Lock"
- 5.2 GA 701-2007 "General Technical Conditions for Fingerprint Lock Anti-theft Lock"
- 5.3 SJT 11236-2001 "General Specification for Antistatic Pasting Panels"
- 5.4 GA-701-2007 "General Technical Conditions for Fingerprint Anti-theft Lock"
- 5.5 GB 21556-2008 "General Safety Technical Conditions for Locks"
- 5.6 JG/T 394-2012 "General Technical Requirements for Building Intelligent Door Locks"
- 5.7 GB_T_17626[1].2-2006 "Electrostatic Discharge Immunity Test"
- 5.8 GB-T 2423.1-2008 "Environmental Tests for Electrical and Electronic Products Part 2: Test Methods Test A: Low Temperature"
- 5.9 GB-T 2423.2-2008 "Environmental Tests for Electrical and Electronic Products Part 2: Test Methods Test B: High Temperature"
- 5.10 GB-T 2423.3-2006 "Environmental Tests for Electrical and Electronic Products Part 2: Test Methods Test Cab: Constant Damp Heat"
- 5.11 GB-T 2423.38-2008 "Environmental Tests for Electrical and Electronic Products Part 2: Test Methods Test R: Water Test Methods and Guidelines"
- 5.12 GB-T 17626.4-2008 "Electromagnetic Compatibility Test and Measurement Technology Electrical Fast Transient Pulse Group Immunity Test"
- 5.13 GB-T 17626.2-2006 "Electromagnetic Compatibility Test and Measurement Technology Electrostatic Discharge Immunity Test"
- 5.14 GB-T 17626.11-2008 "Electromagnetic Compatibility Test and Measurement Technology Immunity Test for Voltage Sag, Short-term Interruption and Voltage Change"
- 5.15 GB-T 17626.3-2006 "Electromagnetic Compatibility Test and Measurement Technology Radio Frequency Electromagnetic Field Radiation Immunity Test"
- 5.16 GBT 2828.1-2012 Count Sampling Inspection Procedure Part 1: Batch-by-Batch Inspection

Sampling Plan Retrieved by Receiving Quality Limit (AQL)

6. Scope of application (scenario)

It is suitable for indoor families, hotels, apartments, hotels and rental rooms.

7. System composition block diagram



8. Product parameters

8.1 Basic parameters

Category	Detailed technical parameters	Remarks
Operating voltage	INPUT:DC 6V	4 1.5V AA alkaline batteries
Standby supply voltage	USB Micro interface power supply: DC 5~7V	Charging treasure or 5V power adapter for power supply
Adapted fingerprint sensor type	Semiconductor sensor	
Password keyboard	Capacitive touch keyboard	
Number of keys	12 keys (0~9,# key to confirm, * key to cancel)	
Key capacity	Password, card, fingerprint mixed total capacity 300 group: Single password 300 group; 299 cards per card; 100 single fingerprints (optional accessories).	
Language style	Voice navigation in Chinese and English	Chinese and English phonetics
quiescent current	< 60uA	Without any working condition
Dynamic current	< 220mA	Power consumption when opening the door after reading fingerprints and swiping the card
Drive output	DC	Operating voltage 3V ~ 6V
Driving load capacity	< 300mA	DC motor
Low voltage alarm voltage	< 4.8V (When the power supply voltage is lower than the standard 80±5%, the battery is dead)	Comply with the national standard GA 374-2019 "Electronic Anti-theft Lock" standard
Card reading distance	0 ~ 1CM	
Data storage time	More than 10 years	
Adapt card type	MF card	

Extensible interface	Bluetooth module, WiFi module	
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8.2 Working environment parameters

Category	Detailed technical parameters
Operating temperature	-25 ℃ ~ +65 ℃
Storage temperature	-40 ℃ ~ +80 ℃
Working humidity	5 ~ 95% RH (no condensation)

8.3 Reliability parameter

Category	Detailed technical parameters	Test Equipment
Cold resistance	-25 ℃, 0% R freezer placed 24 hours product function should be no abnormal	Freezer
Moisture resistance	The product function should be normal after being placed in a +60 ℃, humidity 95% RH constant temperature and humidity test box for 24 hours.	Constant temperature and humidity test box
Antistatic performance	Air discharge 15KV, contact discharge 8KV	Electrostatic tester
Number of Unlocks	More than 5 million times	aging frame
Anti-electromagnetic interference performance	1. The Tesla coil should not be unlocked for interference in all parts and surfaces of the whole lock; 2. The use of high-power radio stations and walkie-talkies to interfere with all parts and surfaces of the whole lock should not be unlocked.	Tesla coil High power radio station Interphone

8.4 Key classification

Key type	Classification	Description
Password	Manage password	It is used for unlocking and setting. There is no management password in the initial state. Please enter the administrator password before using it; The password length can be 6~10 digits
	User password	Used to unlock and cannot enter the management system; The password length can be 6~10 digits.
	Dynamic password	Dynamic passwords are divided into single passwords and aging passwords; Can be used for temporary unlocking or rental authorization
Card	User card	It is only used for unlocking and cannot enter the management system.
Fingerprint	Manage fingerprints	Used for unlocking and setting.
	User fingerprint	It is only used for unlocking and cannot enter the management system.

9. Introduction to Product Functions

9.1 Basic function

Serial number	Category	Impleable content
1	Key input mode	Capacitive touch key input (capacitive touch keyboard keys can slide continuously and quickly to make touch smoother)
2	Way to open the door	Fingerprint, MF card, password, remote unlocking
3	card reading	The card can be read during sleep and key pressing, which effectively solves the mutual interference between touch and card reading.
4	Initialization method	Front lock menu initialization, rear lock key initialization, remote initialization, Bluetooth APP initialization

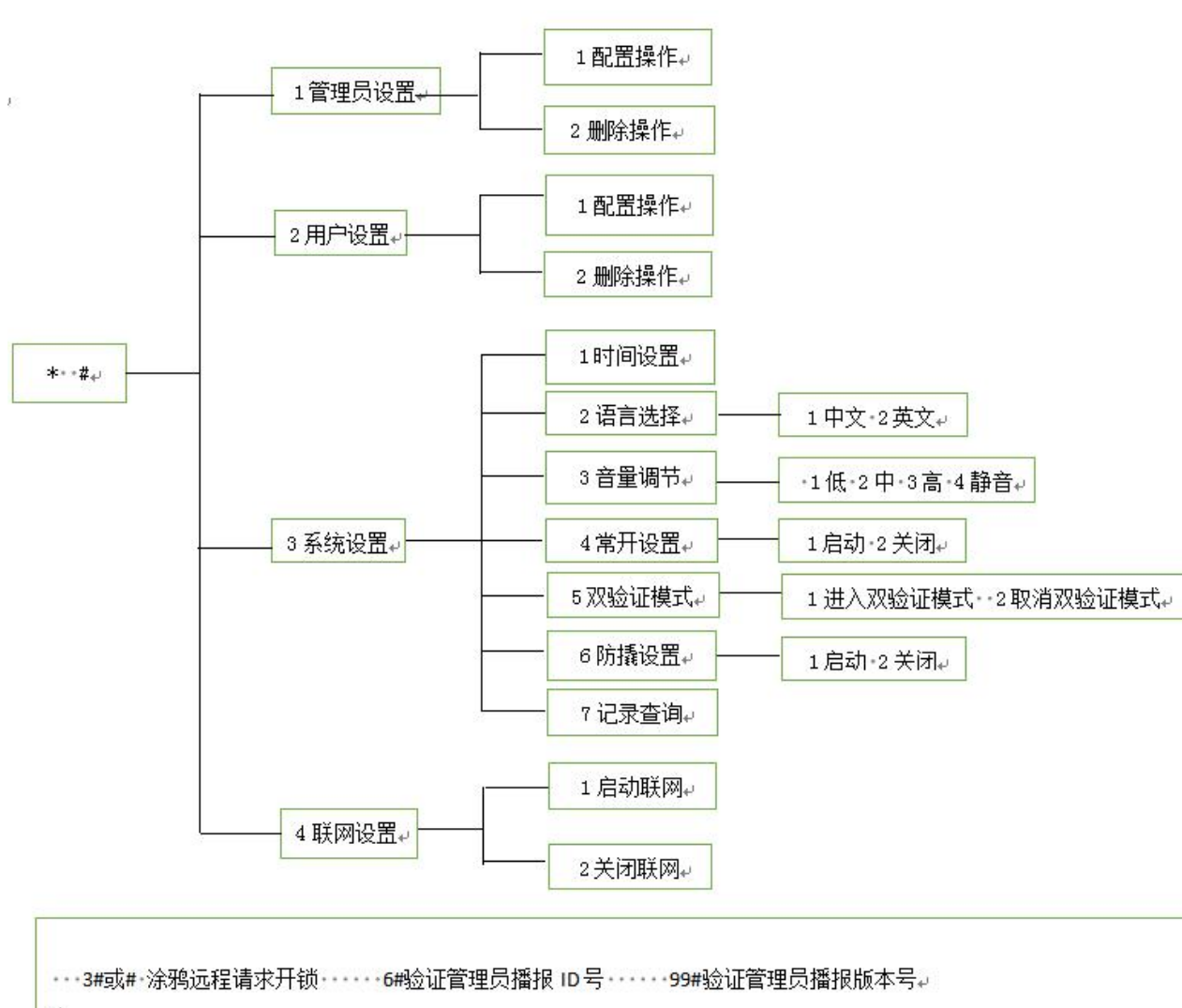
9.2 Extended function

Use scenario	Matching module	Description
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Family, hotel, apartment Hostels, rented houses	Bluetooth module zigbee module Wifi module Remote control module	<p>Bluetooth module functions: Bluetooth unlocking, user management settings, unlocking record query, initialization, anti-prying settings, time settings</p> <p>zigbee module functions: remote unlocking, dynamic password, temporary password, unlocking record reporting, door lock voltage viewing, anti-prying alarm reporting, error key locking reporting, hijacked reporting, doorbell reporting</p> <p>Wifi module: remote unlocking, dynamic password, temporary password, unlocking record reporting, door lock voltage viewing, anti-prying alarm reporting, error key locking reporting, hijacked reporting, doorbell reporting</p> <p>Remote control module: remote control unlock</p>
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10. Operating Instructions

10.1 Menu frame



Keyboard layout



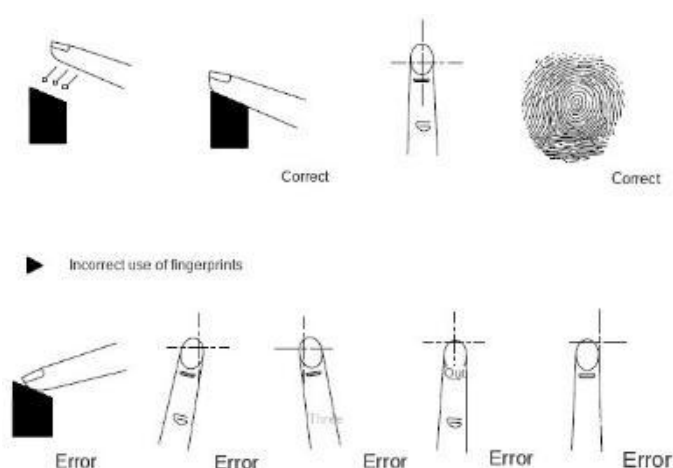
Notes:

- The layout of the numeric keyboard is shown in the above figure. Refer to the above figure when entering the numeric password.
- The [*] key can be executed to return to the previous menu, clear the input content, sleep, and exit the system.
- The [#] key is used as the Enter function key and doorbell function after all inputs are operated.

10.2 Card swiping operation

You can use the card to open the door at 0-2cm in the card swipe (antenna) area to support MF1 and CPU cards.

10.3 Correct Method of Fingerprint Entry and Identification



Notes:

When the fingerprint collection window light is on, please put your finger on the fingerprint collection window according to the above correct method, and the door lock will automatically complete the fingerprint collection in about 1 second.

10.4 Summary of functions

Serial	Function	Functional description
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number		
1	System management	The initial state is demo mode. Please set the administrator information before using it; By default, the first 3 (serial number 0-2) entries are for administrators, the first one can only be set as a digital password, and the second and third ones can be passwords or fingerprints; Enter fingerprint, password or card under user information.
2	Key management	Can save 6-10-digit password, fingerprint and card mixed 300 group; 300 single password 99 single fingerprints; 299 single cards.
3	Dynamic password management	Single temporary password and time-lapse password
4	Security mode	Single-key and double-key unlocking can be supported.
6	Normally open settings	In normally open mode, you can press the * key to lock it with one key.
8	System initialization	Press the initialization key for a long time to restore the system factory settings.
9	Time setting	The system has time memory, which provides time basis for unlocking
10	Voice prompt	Full voice navigation, simple operation.
11	Attack protection	If the wrong key is input 5 times in a row, the system will automatically lock for 3 minutes, and the system cannot be unlocked when it enters the locked state. Manual unlocking and Bluetooth/remote unlocking can immediately release the error key alarm
12	Low pressure alarm	When the battery is low, there will be a voice prompt that the battery is dead after unlocking.
13	Record query	The latest 1000 unlocking operation records can be provided.
15	Virtual password	The unlocking password can be unlocked by entering 30 digits containing the correct password at the end. Effectively prevent others from watching and stealing passwords.
16	Emergency Open Door	When the battery voltage is insufficient to drive the motor, an external power supply can be used for emergency door opening or a mechanical key can be used for emergency door opening.

10.5 Unlock operation

10.6.1 Key Unlock

Password unlocking is divided into regular password unlocking and dynamic password unlocking.

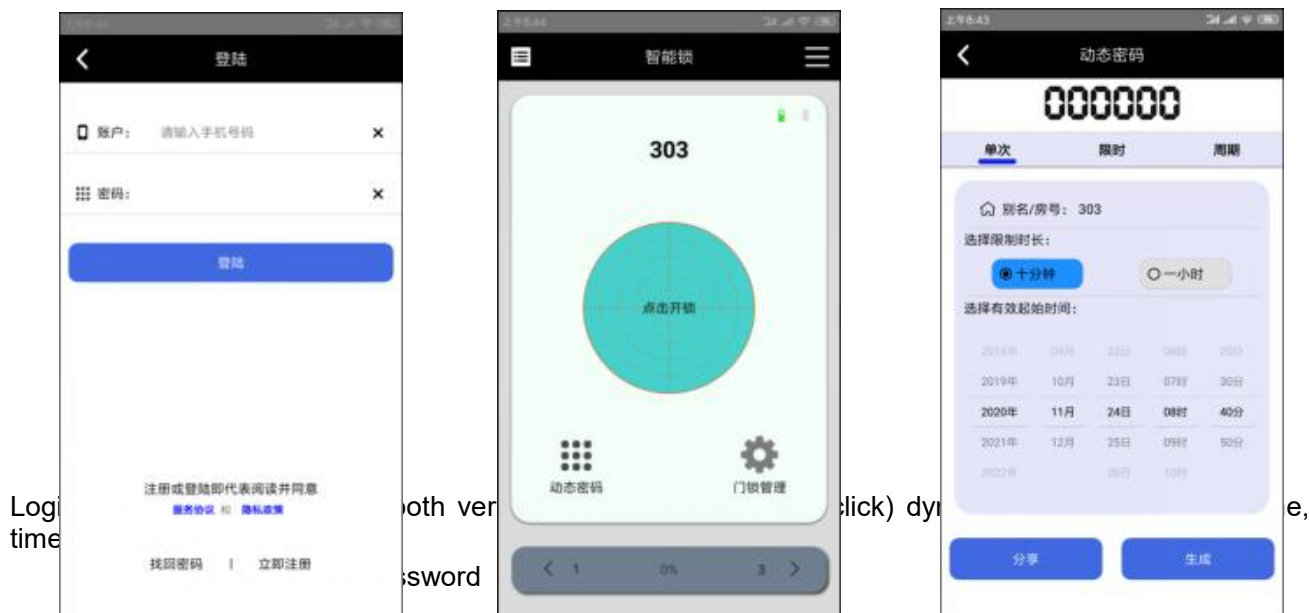
10.6.2 General password unlocking

The regular key is the user key or management key added by the user through the system menu. The user key only has the unlocking function. The management password not only has the unlocking function, but also can press "2 and 8" to open the normally open mode after unlocking.

10.6.3 Dynamic password unlocking

Dynamic password is an offline temporary password generated through APP, which can be unlocked in a single time or in a limited time.

A Interface



Serial number	Function	Functional description
1	10 points	The lock can only be unlocked once within 10 minutes; If it is not used for more than 10 minutes, it will automatically become invalid.
2	1 hour	The lock can only be unlocked once within 1 hour; it will automatically fail if it is not used for more than 1 hour.

C Time-limited temporary password

Serial number	Function	Functional description
1	Hours	Starting Time: Time-limited temporary passwords generated within 120 hours (5 days) can be accurate to hours.
2	Day	Starting time: Temporary passwords with 120 hours (5 days) and less than 35 days can be accurate to days.
3	This week	Starting time: Temporary passwords born within 35 days and less than 120 can be accurate to weeks.
4	Month	The temporary password born in full 120 is accurate to the month.

The maximum time-limited temporary password is two years.

D Periodic temporary password

Periodic passwords can be generated within one year and can be used for 1 to 6 days per week.

E Download method



WeChat Sweep

10.6.4 Single card unlock

Use a configured MF1 card to unlock directly.

10.6.5 Single Fingerprint Unlock

Use the configured single fingerprint to unlock directly.

10.6.6 Double key unlock

Use two passwords, fingerprints or cards to freely combine to unlock; the management key can unlock directly.

10.6 Management menu

- The system adopts full voice menu navigation, and the number keys select the corresponding menu.
- ✧ Enter the "main menu bar" mode: touch the numeric keys on the panel to wake up the system, and directly enter "*,#, management password or management fingerprint#" into the management menu.
Wake-up input "*,#" is to enter the management menu entry, enter the management key# to enter the management menu, you can add keys and other settings.

10.7 Configuration operation

- 1: After entering the configuration operation, you can enter the password, card or fingerprint as needed, and the system will automatically assign the key serial number.
- 2: The first group of keys is the management key, and the system default serial number 000 is the management password. It cannot be deleted and can only be modified.
- 3: The valid digits of the digital password are 6~10 digits.

10.8 Delete operation

- 1: The management password cannot be deleted directly, but can only be modified. Delete by serial number: The number of digits of the input serial number is not limited (but the number is valid within 4 digits). If the input serial number does not have a key, the user will automatically delete it. If the input serial number does not have a key, the user will prompt "Key serial number **** delete failed". If the input serial number exceeds 4 digits, the user will directly prompt "Delete failed".

10.9 Double verification mode

- 1: Turn on the dual verification mode, the door must be opened with two correct and different user keys to unlock;
- 2: Management key and dynamic password unlocking are not restricted by double authentication mode.

10.10 volume adjustment

The volume adjustment is four-level selection, 1. Low; 2. Medium; 3. High; 4. Mute. Press the voice prompt to select the number corresponding to the volume and press the "#" key to confirm.

10.11 Time setting

The server can automatically calibrate the time through local modification or module connection.

10.12 Language selection

- 1: All voice broadcasts in the Chinese interface are female Chinese broadcasts
- 2: All voice broadcasts in the English interface are male English broadcasts

10.13 of doorbell setting

The doorbell is set to two options: 1. Start this function; 2. Turn off this function. Press the voice prompt to select the corresponding number and press the "#" key to confirm. Turn off the doorbell function and press the "#" key to lock the doorbell tone.

10.14 Anti-pry setting

The doorbell is set to two options: 1. Start this function; 2. Turn off this function. Press the voice prompt to select the corresponding number and press the "#" key to confirm. If the anti-skid is turned off, the anti-skid alarm will not be activated.

10.15 Query Unlock Record

1: Press the "*" key to listen to the previous unlocking record, press the "#" key to listen to the next unlocking record, press the "0" key to return to the superior menu, and the "1 ~ 9" key to jump to the corresponding proportion, for example, "1" is to jump to the 10% position of the total number of existing records, "2" is the position of the total number of 20%, and so on.

2: You can also obtain the unlocking record through the Bluetooth connection APP.

10.16 Restore factory settings

Initialization is initialized through the motherboard entry menu or the back panel keys. Press for more than 4 seconds. After initialization, the voice interface will not be changed and the current lock time will not be changed. The unlock record and key information will be cleared to restore the demonstration mode.

10.17 Normally open settings

Normally open setting is two choices, 1. Start this function; 2. Turn off this function. Press the voice prompt to select the corresponding number and press the "#" key to confirm. .

10.18 Quick operation

After the system wakes up, enter "99#" and the system will automatically broadcast the version information of the lock.

After the system wakes up, enter "6, #" and the system will automatically broadcast the ID number of the lock.

After the system wakes up, enter "3, #" remote request to unlock (WiFi version has this function).

10.19 English mode

The operation mode and function of the menu in English mode are the same as those in Chinese, only the voice broadcast is changed to English broadcast.

11. Extended communication

11.1 Bluetooth communication function

11.2 Graffiti module communication function

Corresponding Software: Graffiti Smart APP

Software operation method: open graffiti smart APP, bind gateway, click gateway, click add sub-device, click door lock, enter 86# management password to send distribution network instruction, click APP to confirm keyboard light flash, wait for binding prompt 100% to succeed, and can carry out remote door opening and other operations


Serial number	Function	Functional description
1	Unlock	Remote unlocking
2	Dynamic password	Generate an 8-digit dynamic password that can be unlocked repeatedly within 5 minutes.
3	Temporary password	Generate a 6-digit temporary password that can be unlocked repeatedly within the validity period.
4	Record reporting	The record of unlocking the door lock will be reported to APP.
5	Door lock voltage display	Can view battery voltage in real time
6	Doorbell report	Triggering the doorbell will report
7	Error key lock report	Inputting the wrong key for 5 consecutive times will alarm and report to APP at the same time.
8	Anti-pry reporting	When the anti-pry switch is triggered, it will alarm and report to APP at the same time.
9	Hijacking report	Enter the set hijacking key, and the hijacking alarm will be reported to the related person after unlocking.

12. Graffiti APP

12.1. Graffiti WiFi configuration

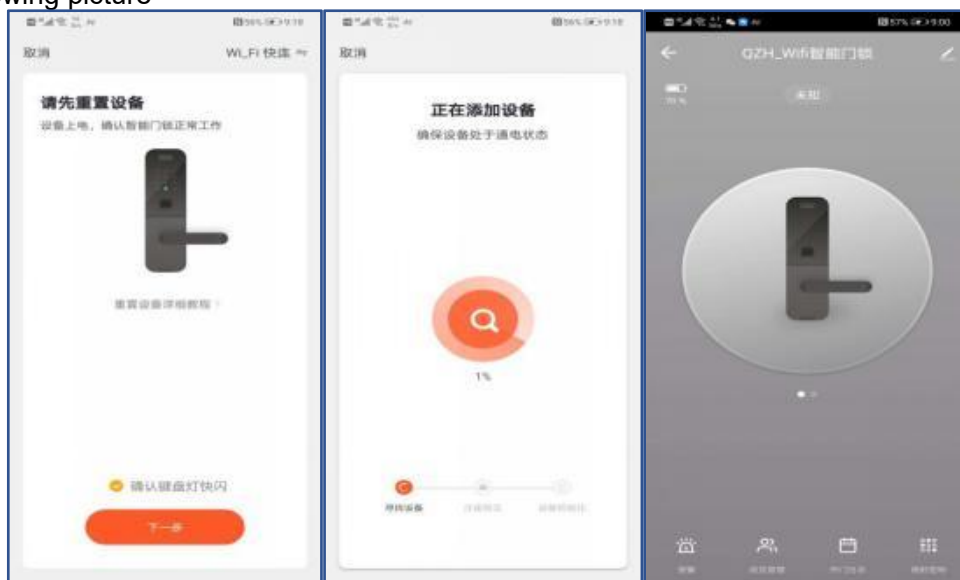
12.1.1.

Enter the lock system network configuration operation, select start to enter the WiFi distribution network state, "5" light flashes to enter the WiFi distribution network mode;

Click the red  icon in the upper right corner of the synchronization app, select Security Sensor → Door Lock (Wi-Fi) → Confirm WiFi network mode (if 5GHz, change to 2.4GHz before proceeding to the



next step) → Select WiFi Quick Connect → Confirm and follow the instructions in the following picture



Pairing successful door lock voice prompt "setup successful"

12.1.2. Door lock operation

12.1.2.1. Status report

Support doorbell reporting, unlocking record reporting, trial and error reporting, low voltage alarm and anti-prying alarm;

12.1.2.2. Remote dynamic password

Support unlimited unlocking dynamic password unlocking within 5 minutes, and automatically fail after 5 minutes;

12.1.2.3. Temporary password

The temporary password is the password issued by the user through the mobile phone app. It can be unlocked for an unlimited number of times within the set valid time period, and the overdue password will automatically become invalid;

12.1.2.4. Remote unlocking

The door lock shortcut key "#" triggers the remote unlocking request, and the WiFi module enters the standby state of receiving remote unlocking, with a waiting time of 60s;

12.1.3. App operation

12.1.3.1. Alarm

Alarm: prompt anti-prying alarm, trial and error alarm;
Hijacking alarm: prompt hijacking alarm;
Doorbell alarm: prompt the doorbell;

12.1.3.2. Member management

Add family members and non-family members;

12.1.3.3. Open door log

Display password, fingerprint, card, temporary password, dynamic password to open the door record;

12.1.3.4. Temporary password

Temporary passwords with time limits can be managed through the network;

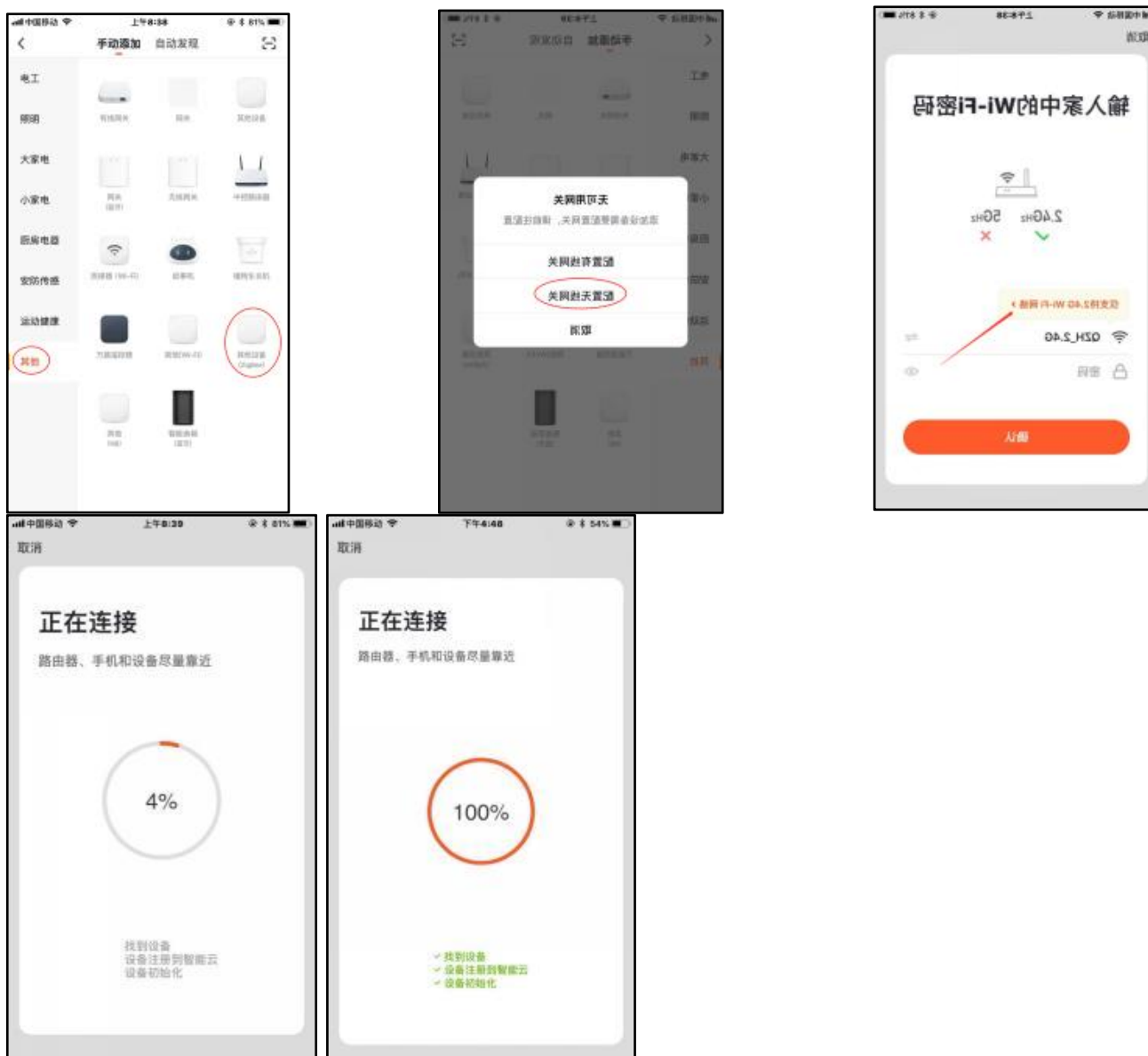
12.2. Graffiti zigbee configuration

12.2.1. Wired gateway

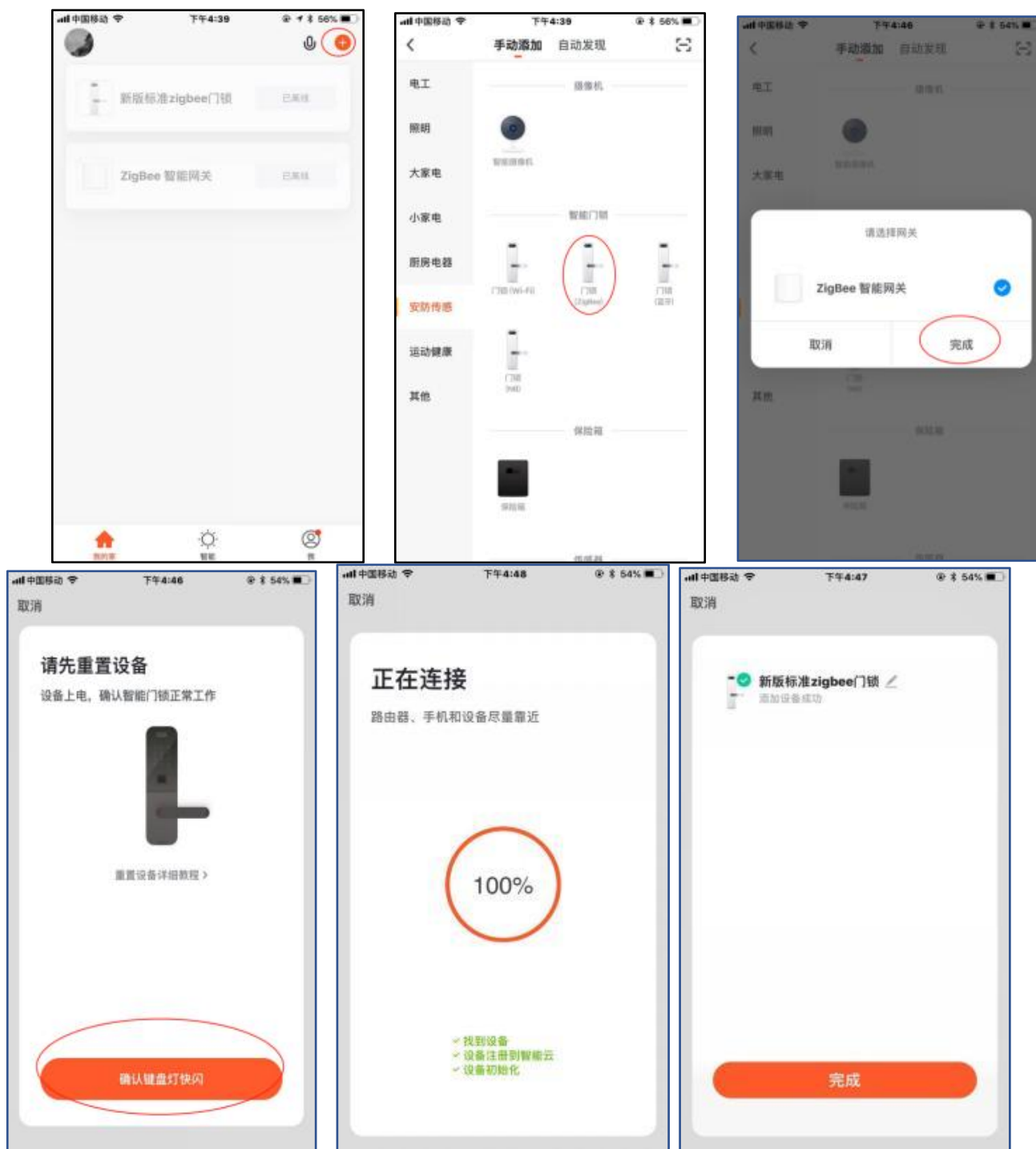




12.2.2. Wireless gateway



12.3. Door lock configuration



App press the number in the upper right corner, select the security sensor "zigBee", select the gateway to enter the door lock configuration interface, wake up the door lock, enter "8, 6,# management key#", voice prompt "set successful", click the confirmation keyboard flash on App, enter the connection interface, and wait for the connection to be completed.

12.4. Message

12.4.1. Alarm

Low voltage alarm, trial and error alarm prompt alarm

12.4.2. Hijacking alarm

Set to unlock the hijacking key and push the hijacking alarm to notify other members of the family.

12.4.3. Doorbell alarm

Push the doorbell prompt when pressing the doorbell

12.5. Member management

12.5.1. Family members

Distinguish between different family members

12.5.2. Non-family members

12.6. Opening record

Record the identity information, unlocking method and unlocking time of the unlocking personnel.

12.7. Settings

12.7.1. Dynamic password

Set dynamic password generation permissions,
Randomly generate 8-digit time-limited passwords for 5 minutes.

12.7.2. Remote door opening management

Set remote unlocking permissions, different family members set different permissions

12.7.3. Temporary password

The time-limited password can be issued remotely as required, and the start time and end time can be set as required.

12.8. Remote unlocking

Direct unlocking through APP, unlocking mode is set in remote door opening management

12.9. Power display

shows the current power of the door lock.

12.10. APP download method

App Store Search for "Graffiti Intelligence"

13. Common Problems and Solutions

Serial number	Frequently Asked Questions	Solution
1	Why can I unlock the management password I entered, but cannot enter the management menu?	The system has a virtual password function. As long as the last 30 digits of the entered password contain the correct password, it can be unlocked. However, the management password used to enter the management menu does not have a virtual password function. You must enter a complete management password to enter the management menu.
2	Why can the original password 0123456789 be unlocked after the original password is 0123456789 changed to 123456?	The system has a virtual password function, as long as the 30 digits of the entered password have a continuous correct password, the lock can be unlocked.
3	Why do you enter a 1 to 2 password (except for the shortcut keys "2#" and "99#") after the system wakes up and the voice prompt the password is wrong instead of invalid?	After the system wakes up, it is judged that the password with 1 to 2 digits is a shortcut key. If the shortcut key does not exist, the password will be incorrect. If the password with 3 to 5 digits is invalid, the password will be invalid.

4	After entering the key for 5 times, the alarm will be given. What if you want to cancel the alarm in a short time?	You can press the initialization key for a short time for 2s to release, and hear a "click" indicating that the alarm has been released.
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