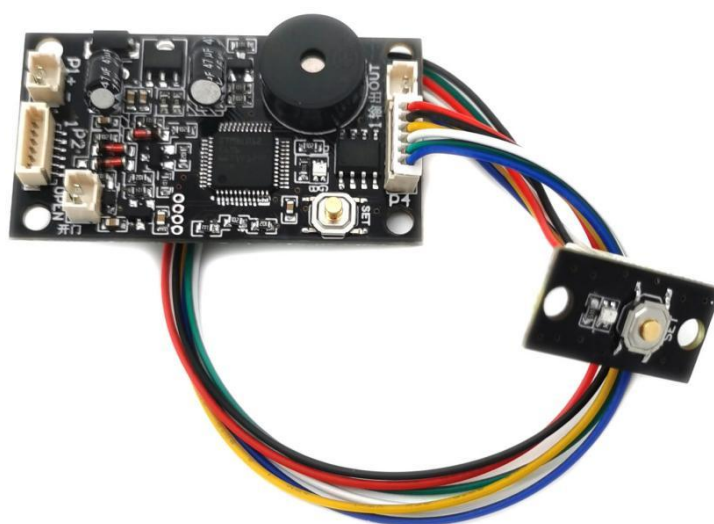


User manual for control board KS200 Detailed Version



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1. Product Introduction

KS200 fingerprint control board is motor output, adopts ST imported chip, ultra-low power consumption design, conventional standby current 5uA.

Compact appearance, equipped with external SET button, easy for embedded installation.

KS200 have motor mode, self-locking mode, hold mode and other working mode.

2. Technical Parameter

Power supply: DC3.7V--6.5V

Stand-by mode current: <7uA

Output: DC5--6V,1.5A(Peak:2.5A)

Administrator Fingerprint: 20 pieces

User Fingerprint: 180 pieces

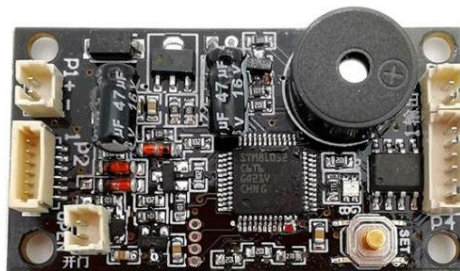
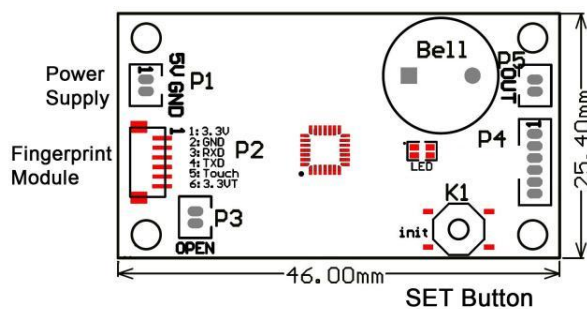
Low voltage alarm: 4.8V (dry battery)

3.5V (Lithium battery)

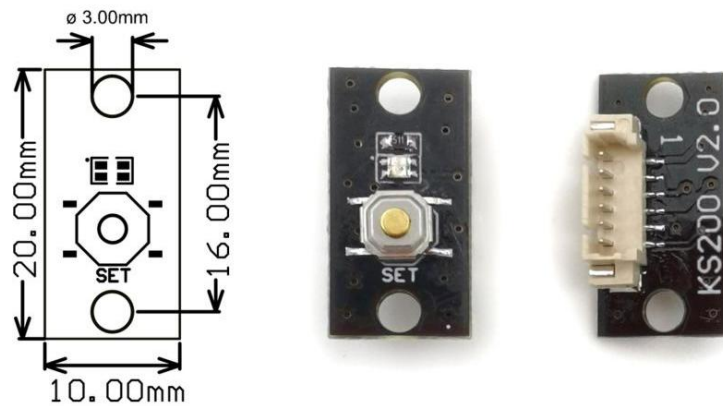
2.1 Power Supply Requirements

DC +5V is used in the design of the power supply, which is allowed to provide power input only after the output end is connected. If there is bad power connection, short circuit, wire collision will lead to the product can not work normally.

2.2 Circuit Board Specifications



2.3 External SET Button



3. Basic Operation Setting

3.1 Register Administrator Fingerprint:

Long press the SET button, release finger when shows **blue** indicator light on the control board, now the fingerprint module indicator flash fast, put the same admin finger with multiple times in fingerprint collection area until hearing music means fingerprint register successful. Fingerprint can be registered continuously and it can register 20 pieces administrator fingerprint; if no need adding fingerprint more, waiting a few seconds to exit. If the administrator is fully registered, it will automatically exit the administrator registration state after hear "DiDiDi" and will start register user fingerprint if press SET button again.

3.2 Register User Fingerprint:

Press the administrator fingerprint until the blue indicator light flash fast and hear the music, means can add user fingerprint. Put the same user finger with multiple times in fingerprint collection area until hearing music means fingerprint register successful. Fingerprint can be registered continuously when system in register state; if no need adding fingerprint more, waiting a few seconds.

3.3 Delete User Fingerprint:

Press the administrator fingerprint until red indicator light flash fast and hear music, means user fingerprints are deleted.

3.4 Factory Setting:

Long press the SET button, until shows **red** indicator light on the control board and hear the music, then release the finger, means initialization operation successful.

4. Factory Default Working Mode

- ① Forward 0.5 seconds → Rest 5 seconds → Reverse 0.5 seconds.
- ② Forward 1 seconds → Rest 5 seconds → Reverse 1 seconds.
- ③ Forward 1 seconds
- ④ Forward 2 seconds
- ⑤ Self-locking Mode
- ⑥ Hold Mode

Note:

The above 6 motor working modes have been set up by the manufacturer before delivery. Customers can choose the corresponding model to purchase according to their actual needs, which reduces the workload and time of setting.

If the above 6 motor working modes cannot meet the actual requirements, the motor can be set freely in any working mode according to the detailed setting section(Custom Setting). If the settings fail, you can simply clear them to restore the original factory default mode.

If customers need to purchase in large quantities and need special settings at the same time, pls contact the customer service of the manufacturer and set directly before leaving the factory, which can reduce the workload of customers and increase work efficiency.

5. Custom Setting

If the preceding function modes cannot meet current application requirements, users can perform the following Setting:

▲ Long press the SET button, release the finger at the corresponding function/color, and then press the SET button as required.

5.1 Instruction for Custom Setting

5.1.1 Setting Motor Forward Time:

Long press the SET button, release finger when shows yellow indicator light on the control board and hear “DiDi” beep. Then short press the SET button, each press increases by 0.5 seconds, increasing from 0. If the reverse time is not set, the forward and reverse times are the same.

5.1.2 Setting Motor Rest Time:

Long press the SET button, release finger when shows cyan indicator light on the control board and hear “DiDiDi” beep. Then short press the SET button, each press increases by 1 seconds, increasing from 0. If the rest time is set to 0, after fingerprint pass, it will be in sleep mode after the forward turn, and fingerprint pass again, it is reversed.

5.1.3 Setting Motor Reversal Time:

Long press the SET button, release finger when shows pink purple indicator light on the control board and hear “DiDiDiDi” beep. Then short press the SET button, each press increases by 0.5 seconds, increasing from 0.

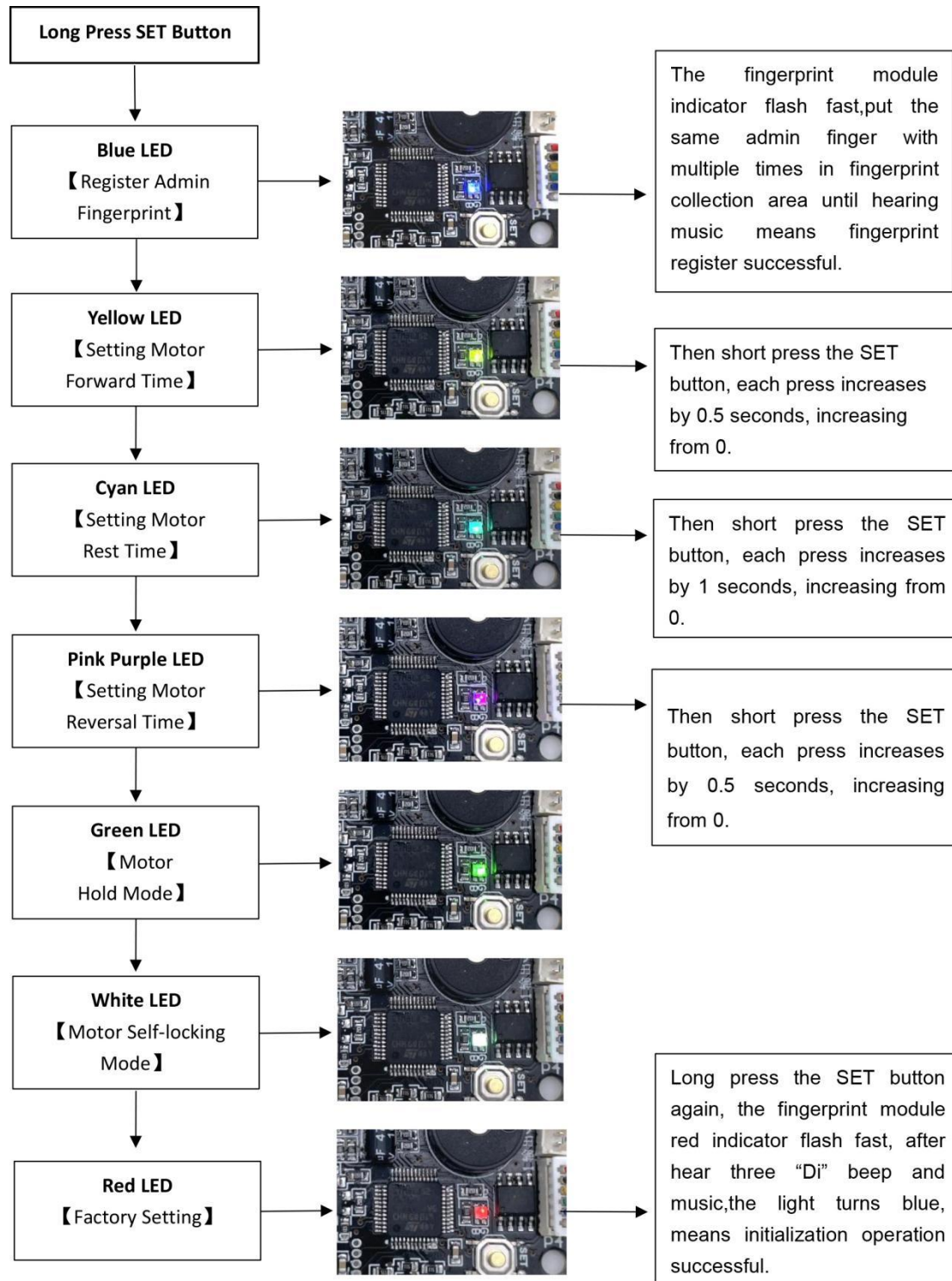
5.1.4 Motor Hold Mode:

Long press the SET button, release finger when shows green indicator light on the control board and hear “DiDiDiDiDi” beep. The motor continues to output after the fingerprint passes, and stops when the finger is released.

5.1.5 Motor Self-locking Mode:

Long press the SET button, release finger when shows white indicator light on the control board and hear “DiDiDiDiDiDi” beep. The motor continues to output after the fingerprint passes, press any finger to stop.

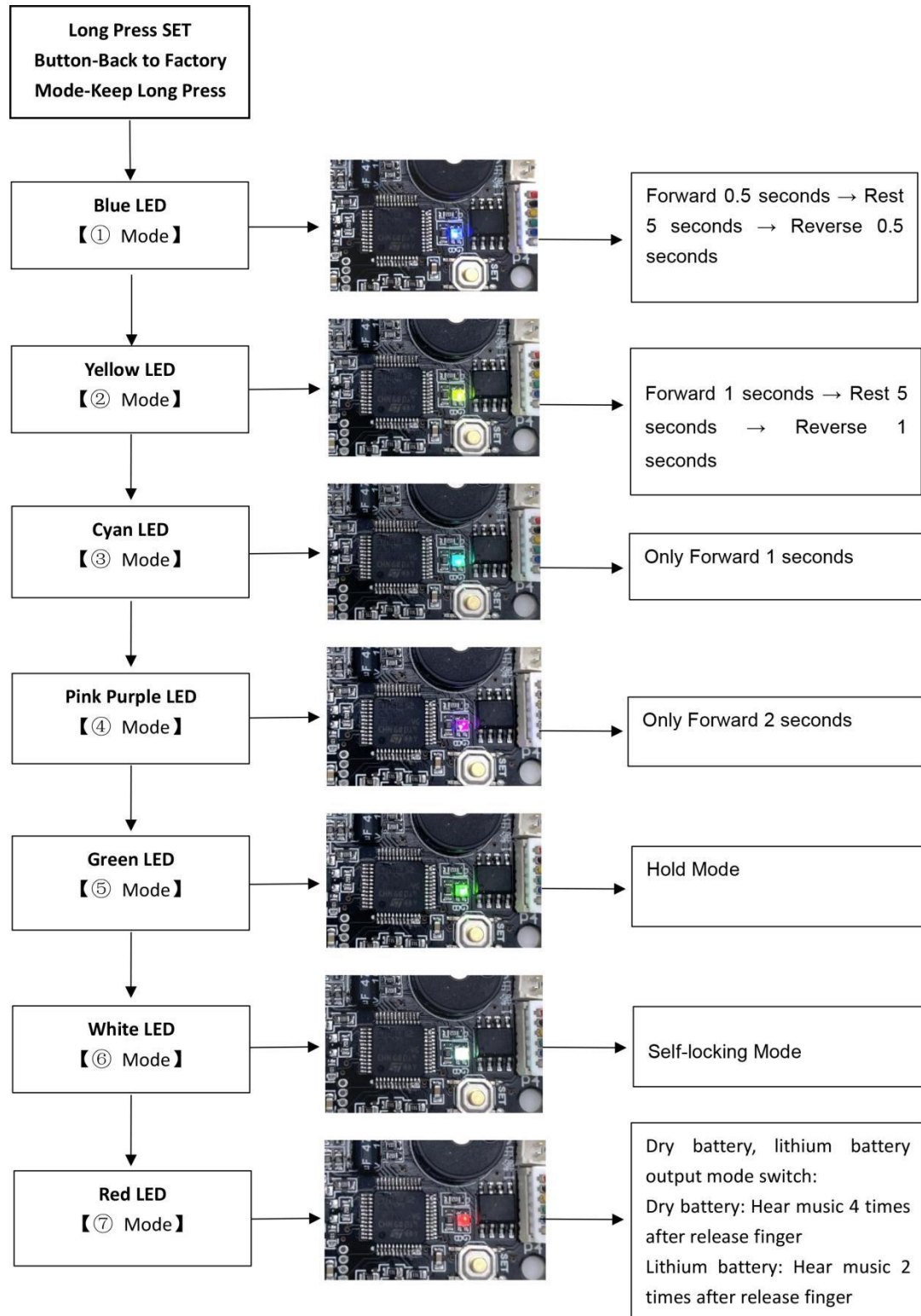
5.2 Flow Chart for Custom Setting



6. Change the Factory Default Working Mode

Changing the factory default mode will initialize the control board and clear all fingerprints. You are advised to change the mode before using it.

▲ Long press the SET button until shows red indicator light, the board back to factory mode, continue to press and hold to hear the music and release the finger when the indicator turns to the corresponding color.



7. FAQ Analysis

1. Each startup has an alarm sound, fingerprint module and indicator light will be bright red.

When the voltage is too low, each startup will have a low voltage alarm, when the low voltage alarm occurs, it is recommended to replace the battery or charge as soon as possible.

2. User fingerprints cannot be registered in hold mode.

In hold mode, when needs to register user fingerprint, press the administrator's fingerprint first, after passing, lift the finger and press the administrator's fingerprint again. When the light flashes and hear the music sounds, the user's fingerprint can be registered.

3. Any fingerprint can pass.

Any fingerprint can be used when factory default, and this function disabled after fingerprint registered.

4. The fingerprint is not sensitive to unlock and need to be pressed several times.

It is recommended to register the same finger from multiple angles and repeat for several times.

5. Errors have been reported while registering user fingerprints.

The administrator fingerprint and user fingerprint must be different. If they are the same, an error will be reported.

6. The motor only can forward or reverse.

Check whether the motor rest time or motor rotation time is set to 0 seconds

7. Does not start properly or does not work properly.

Check the power supply of the control board. If a charger or other regulated power supply is used for power supply, connect a false load resistor to the power supply. It is recommended that the load current be about 100mA.

8. Lithium battery has short standby time.











If the quality of the lithium battery is poor, there will be serious self-discharge or instantaneous insufficient power supply. It is recommended to choose high-quality lithium battery.

9. The fingerprint module lights up automatically, making a "di" sound.

Check whether there are stains or interference around the surface of the fingerprint module; Check whether the power supply ages and the voltage is stable.

8. Control Board Series

GROW Fingerprint Control Board

Type										
Model	KS200	K202	K212	K215-V1.3	K216	K226+G16	K219-A	K219-B	K220	K236-A
Pic										
Size	46*25.4 mm	64.4*25.4 mm	89*53 mm	70*36.4 mm	74.6*46.6mm	74.6*46.6mm	87*68mm	87*68mm	74.6*46.6mm	87*47.1*16.5mm
Power Supply	DC3.7V--6.5V	DC 12V	DC8--24V,8mA	DC10--30V	DC10V--30V	DC10-30V	DC12V	DC12V	DC10-24V	DC6V(4*AAA battery)
Capacity	200	120	200	200	300	100	120	70	200	80
Stand-by Current	<7uA	15uA	40mA	40mA	6mA(DC12V)	6mA(DC12V)	6mA	6mA	10mA	less than 7 uA
Output	Motor:DC5--6V,1.5A (Peak:2.5A)	Relay(Max. current:10A)	Motor: ±DC5V,300mA Relay: 3A	Relay(Max. current: 10A)	Relay(Max. current: 10A)	Relay(Max. current: 10A)	Relay(Max. current: 10A)	Relay(Max. current: 10A)	Relay(Max. current: 10A)	DC5--6V,500mA
Connector	MX 1.0mm 6pin	MX 1.0mm 6pin MX 1.25mm 6pin	MX 1.25mm 4pin	MX 1.0mm 6pin MX 1.25mm 6pin	MX 1.0mm 6pin MX 1.25mm 6pin	MX 1.25mm 9pin	MX 1.0mm 6pin MX 1.25mm 6pin	MX 1.25mm 9pin	MX 1.0mm 6pin	MX 1.0mm 6pin
Connect Fingerprint Module	R502-A,R502-AW,R502-F,R503	R301T,R303T,R307,R502,R502-A,R502-AW,R502-F,R503	R301T,R302,R303,R303T,R304,R305,R306,R307	R301T,R302,R303T,R307,R502,R502-A,R502-AW,R502-F,R503	R301T,R302,R303T,R307,R311,R502,R502-A,R502-AW,R502-F,R503	G16	R301T,R303T,R307,R502,R502-A,R502-AW,R502-F,R503	G16	R502,R502-A,R502-AW,R502-F,R503	R502,R502-A,R502-AW,R502-F,R503
Features and Functions	<ul style="list-style-type: none"> ① Low power consumption ② 4*AA battery or DC3.7V--6.5V ③ Motor Mode/Self-locking Mode/Hold Mode ④ Have Admin/User Function ⑤ Can connect Electronic lock body,Access Control 	<ul style="list-style-type: none"> ① Low power consumption ② DC12V ③ Relay rotation button: 0.5-30s ④ Have Admin/User Function ⑤ Can connect Electronic lock body,Relay,Access Control 	<ul style="list-style-type: none"> ① Two Output: 1.Motor signal output 2.Relay output(0.5s-9s) ② Can connect Door open key signal and Access control Intercom signal 	<ul style="list-style-type: none"> ① DC10-30V ② Relay:1s-20s or Self-locking Mode(finger passed-relay closed,finger passed again-relay opened) ③ Car,Motorcycle, Access control 	<ul style="list-style-type: none"> ① DC10-30V ② Can control by remote control ③ Relay: 0.5s-20s or finger passed-relay closed,finger removed-relay opened ④ Access control,Elevator control,Car 	<ul style="list-style-type: none"> ① DC10-30V ② Managed by Fingerprint and Password ③ 4 Relay Mode ④ Admin/User Fingerprint/Password ⑤ Access control,Elevator control,Car 	<ul style="list-style-type: none"> ① DC12V ② Have Admin/User Fingerprint/Password ③ Have 6 relay ④ Relay: 0.5s-99s ④ Access control,Cabinet ,Elevator control 	<ul style="list-style-type: none"> ① DC10-24V ② Have 2 relay ③ Relay: 0.5s-60s,over 60s-Self-locking Mode(finger passed-relay closed,finger passed again-relay opened) ④ Admin/User Fingerprint ⑤ Access control 	<ul style="list-style-type: none"> ① Low power consumption ② DC 6V (4*AAA Battery) ③ Two mode for output ④ Admin/User Fingerprint ⑤ Can connect Electronic lock body,Relay,Access Control System 	