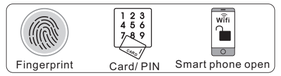
Fingerprint Access Control & Reader







User Manual

INTRODUCTION

This device is a new generation metal waterproof fingerprint & RFID card standalone access control. It has the zinc alloy housing which is anti-explosion and anti-vandal. Conforms to waterproof IP66 which is suitable for outdoor use.
Support 100 or 500 fingerprint users and 10000 card/code users. Support fingerprint/card/code/multi-users/temporary visitor users opening the door. And can be set as the card reader. Support upload and download the data of card & PIN code users. It has the door contact detection and anti-tamper functions.

Supports OTA online upgrade (The users can upgrade their devices by themselves if there is better functional applications)

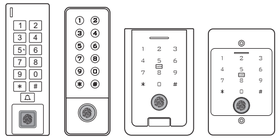
Advantages and Features

- Smart phone management, Smart phone open (WiFi has this feature)
- Supports OTA online upgrade (WiFi has this feature)
- Smart phone door status check (WiFi has this feature)
- Set the temporary PIN code with APP
- Access Mode: fingerprint, card, PIN, multi users
- Wiegand 26-44 bits, 56 bits, 58 bits Input/output
- PIN Wiegand output formats: 4 bits, 8 bits(ASCII), 10 digits virtual card number.
- Pulse Mode and Toggle Mode

Specifications

Fingerprint User	100 or 500
Card User/ PIN User	10000
Operating Voltage	DC10-24V
Idle Current	≤50mA
Active Current	≤120mA
Card Type	EM/ Mifare card
Card Frequency	125KHz/ 13.56MHz
Read Range	≤60mm
Operating Temperature	-20℃ ~ +60℃
Operating Humidity	10% ~ 99%

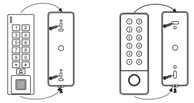
Carton Inventory





INSTALLATION

1. Draw the location of the hole and drill the hole on the installation position according to the hole of the back cover.
2. Fix the back cover on the wall with the wall anchors in the accessories bag.
3. Thread the cable through cable hole, connect related cable. For the un-used cable please separate with insulating tape.
4. Cover the front cover and fix the front and back cover together with screwdriver and screws.



Wires Definition

NO.	Function	Colour	Notes
1	NC	Orange	Relay NC
2	COM	Purple	Relay COM
3	NO	Blue	Relay NO
4	GND	Black	Negative Pole
5	DC+	Red	10-24V DC Power Input
6	OPEN	Yellow	Exit Button
7	D_IN	Brown	Door Contact
8	ALARM-	Grey	Connect to external alarm negative pole
9	D0	Green	Wiegand Output/Input Data 0
10	D1	White	Wiegand Output/ input Data 1
11	BELL	Pink	External doorbell
12	BELL	Pink	External doorbell

Sound and Light Indication

Operation Status	LED	Buzzer
Standby Mode	Red light bright	— —
Enter program Mode	Red light shines	— —
In the Program Mode	Orange light bright	— —
Open lock	Green light bright	One beep
Operation failed	— —	Three beeps

Administrator's Code, Fingerprint and Card

Name	Function
Admin Code	Enter into Program Mode
Admin Fingerprint/Card	Add User Rapidly Delete User Rapidly

Modify Admin Code

Programming Step	Keystroke Combination	LED
Enter Program Mode	✶ Admin Code #	Red shines
Modify Admin Code	0# (New Admin Code) # (Repeat New Admin Code) # (Factory Default is 123456)	Orange bright
Exit Program Mode	✶	Red bright

Note: The Admin Code can be any 6 digits and the admin must keep it in mind.

Set Factory Default and Set Admin Card/ Fingerprint

Press and hold the exit button, power on, release it after two beeps. Swipe the admin card, press the admin fingerprint 3 times, the red led on with one beep, the factory default setting done. And the admin card/ admin fingerprint added successfully.

The admin card/ admin fingerprint has the function of adding/ deleting users.

Note:

1. Reset to factory default, the users' information won't be deleted.
2. If you don't want to add admin card/fingerprint: press and hold the Exit Button for 5 seconds, release it until hear one long beep and the red light bright.

Tuya app Smart phone unbinding

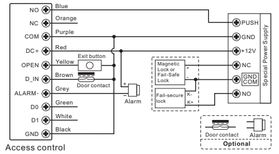
Programming Step	Keystroke Combination	LED
Enter Program Mode	✶ Admin Code #	Red shines
WiFi unbinding	90# (Admin Code) #	Orange bright
Exit Program Mode	✶	Red bright

Note: 1.WiFi unbinding: with this operation, the device will disconnect with all the smart phones, the phone can't control the device at the time.

STANDALONE MODE

Connection Diagram

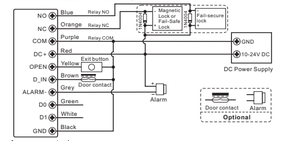
Special Power Supply



Access control

DC Power Supply

Attention: Install a 1N4004 or equivalent diode is needed when use a common power supply, or the reader might be damaged.
(1N4004 is included in the packing).



Access control

Usage of Admin Add/Delete Card and Fingerprint

Using Admin cards to add and delete users		
Add users	Step 1: Read Admin card or press Admin fingerprint	
	Step 2: Read user card or press the fingerprint 3 times. (Repeat step 1 for additional users)	
	Step 3: Read Admin card or press Admin fingerprint again to end	
Delete users	Step 1: Read Admin card or press Admin fingerprint twice at the standby mode	
	Step 2: Read user cards or press fingerprint (Repeat step 1 for additional users)	
	Step 3: Read Admin card or press Admin fingerprint again to end	

Simplified Instruction

Enter the Programming Mode	✶ - Admin Code-# Then you can do the programming (Factory default is 123456)
Modify Admin Code	**0# (New Admin Code) # (Repeat New Admin Code)#** (The Admin Code can be any 6 digits)
Add Users	**1# - Read Card/ Press Fingerprint** Note: When adding users, each fingerprint should be pressed once (or three) in succession.
Delete Users	**2# - Read Card/ Press Fingerprint**
Exit from the Programming Mode	✶
How to release the door	
Open door by Fingerprint	(Fingerprint)
Open door by card	(Read Card)
Open door by User PIN	(Users PIN) #
Open door by user card + PIN	(Read Card) (Users PIN) #

Add Users

Programming Step	Keystroke Combination	LED
Enter Program Mode	✶ Admin Code #	Red shines
Add Card/ PIN Users		
Add Card User: By Card	1# (Read Card)…	Orange bright
Add Card User: By Card Number	1# (Input 8/10 digits card number) #…	
Add PIN Users	1# (4~6 digits PIN) # …	
Add Fingerprint Users		
Add Fingerprint User: By Fingerprint	**1# (Fingerprint)** … (Press each fingerprint 3 times)	Orange bright

ID Number Add Users

Programming Step	Keystroke Combination	LED
Enter Program Mode	✶ Admin Code #	Red shines
Add Card/ PIN Users		
Add Card User	10# ID# (Read Card)…	Orange bright
Add Card User: By Card Number	10# ID# (Input 8/10 digits card number) #…	
Add PIN Users	10# ID# (4~6 digits PIN) # …	
Add Fingerprint Users		
Add Fingerprint User: By Fingerprint	11# ID# (Fingerprint) … (Press each fingerprint 3 times)	Orange bright

Note: 1. The ID number is a number assigned to each user and it is usually useless. But when you want to delete specific user, you should input the ID number or card number.

2. When adding users, the ID number will be assigned automatically from small to big.

3. **Add fingerprint users:** Every fingerprint should be pressed 3 in times.

4. User Fingerprint ID range: 1-100 or 1-500, User Card or Code ID range: 1-9988, Anti-duress users ID: 9989、9990, Visitor users ID range: 9991-10000.

Add proximity cards sequentially numbered

Programming Step	Keystroke Combination	LED
Enter Program Mode	✶ Admin Code #	Red shines
Add proximity cards sequentially numbered	10# (Input the first ID number) # (card quantity) # (The first card number) #	Orange bright
Exit Program Mode	✶	Red bright

Note: The ID number must be empty and successive.

Add Visitor Users

Programming Step	Keystroke Combination	LED
Enter Program Mode	✶ Admin Code #	Red shines
Add Visitor Card	10# ID# (1~9)# Read Card	Orange bright
Add Visitor PIN	10# ID# (1~9)# (4~6 digits PIN)#	
Exit Program Mode	✶	Red bright

Note:Visitor users ID range: 9991~10000, Number of time is 1~9.

Delete User

Programming Step	Keystroke Combination	LED
Enter Program Mode	✶ Admin Code #	Red
Delete Card User: By Card	2# (Read Card) …	Orange bright
Delete User: By Fingerprint	2# (Fingerprint) …	
Delete Card User: By Card number	2# (Input 8/10 digits card number) # …	
Delete PIN User	2# (4~6 digits PIN) # …	

Delete Card/ PIN User: By ID number	20# (Input ID number) # …	Orange bright
Delete All Card/ PIN User	20# (Admin Code) #	
Delete Fingerprint User: By ID number	21# (Input ID number) # …	
Delete All Fingerprint User	21# (Admin Code) #	
Delete All User	2# (Admin Code) #	
Exit Program Mode	✶	Red

Note: User Fingerprint ID range: 1-100 or 1-500, User Card or Code ID range: 1-9988, Anti-duress users ID: 9989、9990, Visitor users ID range: 9991-10000.

Change the user code

Standby mode	✶ ID# old code # new code # new code #
Exit the programming mode	Automatically exit when change done

Pulse Mode and Toggle Mode Setting

Programming Step	Keystroke Combination	LED
Enter Program Mode	✶ Admin Code #	Red shines
Access Time Setting	3# (0~180) # (Factory default is Pulse Mode)	Orange bright
Set Toggle Mode	3# 9999#	
Exit Program Mode	✶	Red bright

Note: 1. Pulse Mode and Toggle Mode, you only can choose one.

2. Factory default is Pulse Mode, and access time is 5 seconds. 0 seconds=100MS.
3. **Pulse Mode**: The door will be closed automatically after opening the door for a while.
   Toggle Mode: Under this mode, after opening the door, the door won't be closed automatically until next valid user input. That's means whether open or close the door, you must swipe valid card or input valid fingerprint.

Access Mode Setting

Programming Step	Keystroke Combination	LED
Enter Program Mode	✶ Admin Code #	Red shines
Open door by card	4# 0#	Orange bright
Open door by code	4# 1#	
Open door by Fingerprint	4# 2#	
Open door by card+ code	4# 4#	
Open door by multi-user	4# (42~49) #	
Open door by card or code or Fingerprint	4# 3# (Factory Default)	
Exit Program Mode	✶	Red bright

Note: The number of Multi-User access can be set to 2~9. If the user number is set to 9, it should input 9 different valid users continuously to access, and the time interval of inputting two valid user should be less than or equal 10s. If timeout, the device will exit to standby mode automatically. During the operation the red led light shines.

Alarm output Time Setting (Factory default is 1 minute)

Programming Step	Keystroke Combination	LED
Enter Program Mode	✶ Admin Code #	Red shines
Set alarm time	30# (0~3)#	Orange bright
Exit Program Mode	✶	Red bright

Note: Alarm time range: 1~3 minutes, 0: Turn off alarm, and it includes door contact alarm, tamper alarm, and the time alarm of safe mode.

Door Detection Setting

Programming Step	Keystroke Combination	LED
Enter Program Mode	✶ (Admin Code) #	Red shines
To disable door detection	50# 0# (Factory Default)	Orange bright
To enable door detection	50# 1#	

To enable door not closed detection	51# 0#	Orange bright
To disable door not closed detection	51# 1# (Factory Default)	
Exit Program Mode	✶	Red bright

Note: After enable the door detection function, you must connect the detection switch into the wiring. There will be two detection status:

1. The door is opened by valid user, but not closed in 1 minute, the device will beep.
   How to stop the warnings: Close the door/valid user/ Automatically stop when the alarm time is up.
2. If the door opened by force, the device and external alarm will activate.
   How to stop the alarm: Valid user/Automatically stop when the alarm time is up.

Safe Mode Setting

Programming Step	Keystroke Combination	LED
Enter Program Mode	✶ Admin Code #	Red shines
Close safe Mode	5# 0# (Factory default)	Orange bright
Lockout Mode	5# 1#	
Alarm output Mode	5# 2#	
Exit Program Mode	✶	Red bright

Note: **Lockout Mode**: If swipe card/input fingerprint with invalid users for 10 times in 10 minute, the device will be lockout for 10 minutes. When in Lockout Mode, press the Exit Button can open the door.

Alarm Output: If swipe card/input fingerprint with invalid users for 10 times in 10 minute, the device will beep and external alarm will activate. The valid user can remove the alarm.

Sound and Light mode Setting

Programming Step	Keystroke Combination	LED
Enter Program Mode	✶ Admin Code #	Red shines
Control Sounds: OFF	6# 0#	Orange bright
ON	6# 1# (Factory Default)	
Control Red LED: OFF	60# 0#	
ON	60# 1# (Factory Default)	
Control Keypad LED: OFF	61# 0#	
ON	61# 1# (Factory Default)	
Intelligent keyboard light	61# 2#	
Anti-tamper Alarm: OFF	52# 0# (Factory Default)	
ON	52# 1#	
Exit Program Mode	✶	Red bright

Data transmission of user card & user code

Programming Step	Keystroke Combination	LED
Enter Program Mode	✶ Admin Code #	Red shines
Enter the menu	9# 1#	Orange bright
Exit Program Mode	✶	Red bright

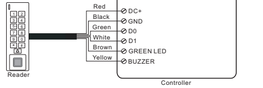
Note: (Only support copy user of card and code)

1. The two devices must be the device produced by us and support this function.
2. The two devices have the same admin code
3. Connect the Wiegand cable of the two devices and power on

For example:
For device A and B, they have the same admin code. Add a new card & code user to the device A. Device B has no user. Connect the Wiegand cable of device A and B, then power on. Do the operation of * admin code # 9# 1# on device A. The green led of the two devices flash. The device A is sending the user data to device B.

WIEGAND READER MODE

Connection Diagram



Set standalone / Wiegand reader mode

Programming Step	Keystroke Combination	LED
Enter Program Mode	✶ Admin Code #	Red shines
Standalone Mode	8# 0# (Factory Default)	Orange bright
Wiegand reader Mode	8# 1#	
Exit Program Mode	✶	Red bright

Note: In wiegand reader mode, brown wire control the Green LED, Yellow wire control the buzzer, only active with low voltage.

Wiegand Format Setting (Factory Default: EM 26 bit, Mifare 34 bit, Password 4 bit)

Programming Step	Keystroke Combination	LED
Enter Program Mode	✶ Admin Code #	Red
Wiegand check code: OFF	7# 0#	Orange bright
ON	7# 1# (Factory Default)	
Password Wiegand Format	70# (0# or 4# or 8#)	
EM Wiegand format	71# (26# ~ 44#)	
Mifare Wiegand format	72# (26#~44#, 56#, 58#)	
Exit Program Mode	✶	Red

Note: (1) 10 Digits Virtual Card Number: Input 4~6 digits PIN, press "**#**", output a 10-bit decimal card number. For example, input password 999999, the output card number is 0000999999.

(2) Each key press sends 4 bits data, the corresponding relationship is:

1 (0001)	2 (0010)	3 (0011)	4 (0100)	5 (0101)	6 (0110)
7 (0111)	8 (1000)	9 (1001)	✶(1010)	0 (0000)	# (1011)

(3) Each key press sends 8 bits data, the corresponding relationship is:

1 (1110 0001)	2 (1101 0010)	3 (1100 0011)	4 (1011 0100)		
5 (1010 0101)	6 (1001 0110)	7 (1000 0111)	8 (0111 1000)		
9 (0110 1001)	✶ (0101 1010)	0 (1111 0000)	# (0100 1011)		

INTERLOCK MODE

Interlock for two doors, this function usually apply in the places with high safety. For example, there are two doors name A and B in the passage. You access door A with card, and then you cannot access door B with the card until door A closed. That is to say: both of the doors should be closed, then you can swipe your card on one of them.

Programming Step	Keystroke Combination	LED
Enter Program Mode	✶ Admin Code #	Red shines
Close Interlock Mode	80# 0# (Factory Default)	Orange bright
Enable Interlock Mode	80# 1#	
Exit Program Mode	✶	Red bright

Note: The Door Contact must be installed, or this function cannot be enable.

Wiring diagram of Interlock

