Metal Waterproof 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 200 or 880 or 1750 fingerprint users and 2120 card 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.

Advantages and Features

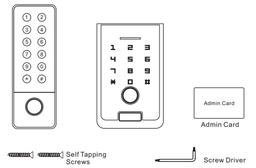
- Metal housing, Anti-vandal, and Anti-explosion
- Waterproof, Conforms to IP66
- Support EM or Mifare card
- Large User Capacity, 200 or 880 or 1750 Fingerprint Users and 2000 card Users
- 10 Visitor users
- Access Mode/Access Method: fingerprint, card, PIN, multi users
- Mifare Wiegand 26-44 bits, 56 bits, 58 bits Input/output EM Wiegand 26 bit.
- PIN Wiegand output formats: 4 bits, 8 bits(ASCII), 10 digits virtual card number.
- Pulse Mode and Toggle Mode

Specifications

Operating Voltage	DC12V±25%
Idle Current	≤45mA
Active Current	≤150mA

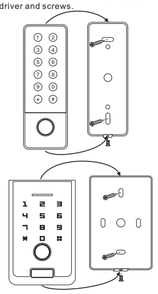
Card Type	EM or Mifare card
Card Frequency	125KHz or 13.56MHz
Read Range	≤30mm
Operating Temperature	-20℃ ~ +60℃
Operating Humidity	10% ~ 99%
Fingerprint User	□200 or □880 or □1750
Card User/ PIN User	2120
Dimensions	Slim: L130xW46xH16(mm) Wide: L115xW76xH25(mm) Circular: ϕ63mm
Unit Weight	Slim: 230g,Wide:400g
Shipping Weight	Slim: 300g, Wide:470g

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, Connect to power supply Negative Pole
5	DC+	Red	Positive Pole, Connect to power supply Positive Pole
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

Schematic Diagram of Pressing Fingerprint

Note：Recording and using the fingerprint must pay attention to the correct method：it generally uses the index finger/middle finger/the third finger, and press pattern of the first section of finger flat on the fingerprint lens.

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

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

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

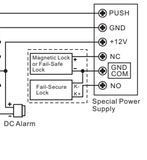
Note:

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 10 seconds, release it until hear one long beep and the red light bright.

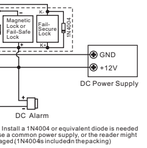
STANDALONE MODE

Connection Diagram

Special Power Supply



DC Power Supply



Attention: Install a 1N4004 or equivalent diode is needed when use a common power supply, or the reader might be damaged.(1N4004is includedin thepacking)

Simplified Instruction

Enter the Programming Mode	✶ - Admin Code-# Then you can do the programming (Factory default is 777777)
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 in succession.
Delete Users	**3# - 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) #

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 fingerprint (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

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 1) (Fingerprint 2)…	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	2# ID# (Read Card)…	Orange bright
Add Card User: By Card Number	2# ID# (Input 8/10 digits card number) #…	
Add PIN Users	2# ID# (4~6 digits PIN) # …	
Add Fingerprint Users		
Add Fingerprint User: By Fingerprint	2# ID# (Fingerprint 1) …	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. User Fingerprint ID range: 0-879,
   Admin Authority Fingerprint ID number 879.
   User Card or Code ID range: 880-2999.
   Anti-duress users ID range: 2988, 2989.
   Visitor users ID range: 2990~2999.

Add proximity cards sequentially numbered

Programming Step	Keystroke Combination	LED
Enter Program Mode	✶ Admin Code #	Red shines
Add proximity cards sequentially numbered	2# (Input the first ID number) # (Input the number of card) # (Input 8/10 digits 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	2# ID# (1~9)# Read Card	Orange bright
Add Visitor PIN	2# ID# (1~9)# (4~6 digits PIN)#	
Exit Program Mode	✶	Red bright

Note:Visitor users ID range: 2990~2999, Number of time is 1~9.

Delete User

Programming Step	Keystroke Combination	LED
Enter Program Mode	✶ Admin Code #	Red shines
Delete Card User: By Card	3# (Read Card) …	Orange bright
Delete User: By Fingerprint	3# (Fingerprint) …	
Delete Card User: By Card number	3# (Input 8/10 digits card number) # …	
Delete PIN User	3# (4~6 digits PIN) # …	
Delete User: By ID number	4# (Input ID number) # …	
Delete All User	3# (Admin Code) #	
Exit Program Mode	✶	Red bright

Note: Fingerprint ID range: 0-879, Card ID or code ID range: 880~2999.

Change the user code

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

Note: Code ID range:880-2999, user code must be different.

Pulse Mode and Toggle Mode Setting

Programming Step	Keystroke Combination	LED
Enter Program Mode	✶ Admin Code #	Red shines
Access Time Setting	5# (1~99) # (**Factory default is Pulse Mode**)	Orange bright
Set Toggle Mode	5# 0#	
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.
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 Fingerprint	6# 0#	Orange bright
Open door by card	6# 1#	
Open door by code	6# 2#	
Open door by card+ code	6# 3#	
Open door by multi-user	6# 3 (2~9) #	
Open door by card or code or Fingerprint	6# 4# (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 led 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	7# (0~3)#	Orange bright
Exit Program Mode	✶	Red bright

Note: Alarm time range: 0~3 minutes, 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	8# 3# (Factory Default)	Orange bright
To enable door detection	8# 4#	
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	8# 0# (Factory default)	Orange bright
Lockout Mode	8# 1#	
Alarm output Mode	8# 2#	
Exit Program Mode	✶	Red bright

Note: **Lockout Mode**: If swipe card/input fingerprint with invalid users for 6 times in 1 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 6 times in 1 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	9# 0#	Orange bright
ON	9# 1#(Factory Default)	
Control Red LED: OFF	9# 2#	
ON	9# 3#(Factory Default)	
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	11# 8#	Orange bright
Exit Program Mode	✶	Red bright

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

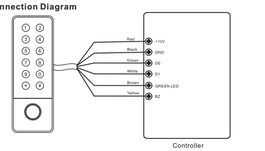
1. The two devices must be the device produced by us and support this function.
2. The two devices have the same admin code

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 a new operation of * admin code # 11 # 8 # 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	9# 7# (Factory Default)	Orange bright
Wiegand reader Mode	9# 8#	
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 is weigand 26 bits)

Programming Step	Keystroke Combination	LED
Enter Program Mode	✶ Admin Code #	Red shines
Turn off wiegand check code	10# 0#	Orange bright
Turn on wiegand check code	10# 1 # (Factory Default)	
Wiegand format	10# (26~44,56,58) #	
Exit Program Mode	✶	Red bright

Note: EM Wiegand Output: 26 bit. Mifare Wiegand Output Range: 26~44 bits, 56 bits, 58 bits. It not only used for card reader output , but also access controller input.

Set Wiegand Output Formats of Password

Programming Step	Keystroke Combination	LED
Enter Program Mode	✶ Admin Code #	Red shines
4 bits	10# 4# (Factory Default)	Orange bright
8 bits	10# 8#	
10 Digits Virtual Card Number output	10# 10#	
Exit Program Mode	✶	Red bright

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)