

INTRODUCTION

The device is a single door multifunction standalone access controller or a Wiegand output reader. The operation is very user-friendly, and low-power circuit makes it long service life.

Features

- > Metal case, anti-vandal
- > Waterproof, conforms to IP65
- > Video calling based on WiFi
- > One relay, 1,000 users (990 common + 10 visitor)
- > PIN length: 4-6 digits
- > Card type: 125KHz EM Card / 13.56MHz Mifare Card
- > Can be used as Wiegand reader with buzzer output
- > Card block enrollment
- > Tri-color LED status display
- > Pulse mode, Toggle mode

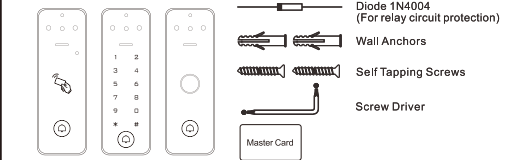
Specifications

User Capacity	1000
Common User	900 (Fingerprint version support 100 fingerprints)
Visitor User	10
Operating Voltage	12-18V DC
Working Current	≤150mA
Idle Current	≤60mA
Proximity Card Reader	EM/Mifare
Radio Technology	125KHz / 13.56MHz
Read Range	2-6cm
PIN Length	4-6 digits (Keypad version only)
Wiring Connections	Relay Output, Exit Button, Wiegand Input, Wiegand Output
Relay	One (NO, NC, Common)
Adjustable Relay Output	0-99 Seconds (5 seconds default)
Time Lock Output Load	2 Amp Maximum
Wiegand Interface	EM card: Wiegand 26-44 bits input & output. Mifare card: Wiegand 26-44bits 56bits, 58bits input & output. (Factory default: Wiegand 26bits for EM card, Wiegand 34bits for Mifare card) 4 bits, 8 bits(ASCII), 10 digits Virtual Number (Factory Default: 4 bits)
PIN Output	

- 01 -

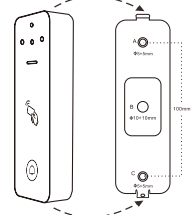
Environment	Meets IP65
Operating Temperature	-40°C~60°C(-40°F~140°F) -30°C~60°C(-22°F~140°F) Fingerprint only
Operating Humidity	0%RH~92%RH
Physical	Zinc-Alloy
Colour	Silver & Black
Dimensions	142 x 48 x 22mm
Unit Weight	315g
Shipping Weight	410g

Carton Inventory



INSTALLATION

- > Remove the back cover from the unit
- > Drill 2 holes(A,C) on the wall for the screws and one hole for the cable
- > Knock the supplied rubber bungs to the screw holes(A,C)
- > Fix the back cover firmly on the wall with 4 flat head screws
- > Thread the cable through the cable hole(B)
- > Attach the unit to the back cover



- 02 -

Wire Color	Function	Notes
Red	DC +	12-18V DC Power Input
Black	GND	Negative Pole of DC Power Input
Blue	Relay NO	Normally Open Relay Output (install diode provided)
Brown	Relay Common	Common Connection for Relay Output
Grey	Relay NC	Normally Closed Relay Output (Install diode provided)
Yellow	OPEN	Request to Exit(REX) Input
Pass-Through Wiring (Wiegand Reader or Controller)		
Green	Data 0	Wiegand Output (Pass-through) Data 0
White	Data 1	Wiegand Output (Pass-through) Data 1

Sound and Light Indication

Operation Status	LED	Buzzer
Stand by	Red light bright	—
Enter into programming mode	Red light shines	One beep
In the programming mode	Orange light bright	One beep
Operation error	—	Three beeps
Exit from the Programming mode	Red light bright	One beep
Open lock	Green light bright	One beep
Alarm	Red light Shines quickly	Beeps

Basic Configure

Enter and Exit Program Mode

Programming Step	Keystroke Combination
Enter Program Mode	* (Master Code) #
Exit Program Mode	*

Set Master Code

Programming Step	Keystroke Combination
1. Enter Program Mode	* (Master Code) #
	0 (New Master Code) # (Repeat New Master Code) #
2. Update Master Code	0 (New Master Code) # (Master code is any 6 digits)
3. Exit Program Mode	*

- 03 -

Set the Working Mode

Notes: The device has 3 working modes: Standalone Mode, Controller Mode, Wiegand Reader Mode, choose the mode you use. (Factory default is Standalone Mode / Controller Mode)

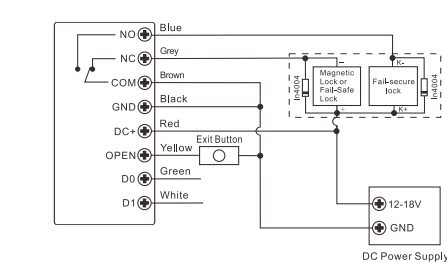
Programming Step	Keystroke Combination
1. Enter Program Mode	* (Master Code) #
2. Standalone/Controller Mode	7 7 # (Factory default)
2. Wiegand Reader Mode	7 8 #
3. Exit	*

STANDALONE MODE

The device can work as Standalone Access Control for single door. (Factory default mode) --- 7 7 #

Connection Diagram

Common Power Supply

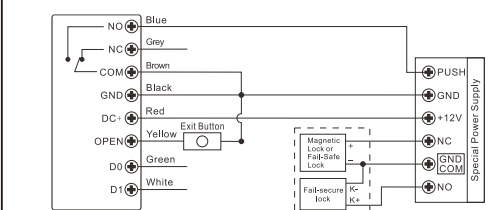


- 04 -

Attention:

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

Access Control Power Supply



Programming

IMPORTANT! Programming will be vary depending on access configuration. Follow the instructions according to your access configuration.

Notes:

> **User ID number:** Assign a user ID to the access fingerprint/ card/ PIN in order to track it.

The Common User ID:

Fingerprint version:
- Fingerprint user ID: 0 - 98
- Card user ID: 100 - 989
- Master Fingerprint User ID: 99
- Visitor User ID: 990-999

Other two versions:
- PIN/Card User ID: 0-989
- Visitor User ID: 990-999

IMPORTANT! User IDs do not have to be proceeded with any leading zeros. Recording of User ID is critical. Modifications to the user require the User ID be available.

> **Proximity Card:**
Proximity Card: 125KHz EM card/13.56MHz Mifare Card

> **PIN:** Can be any 4-6 digits except 8888

- 05 -

Add Common Users

Programming Step	Keystroke Combination
1. Enter Program Mode	* (Master Code) #
Add Fingerprint User (Fingerprint version only)	
2. Using Auto ID (Allows the device to assign Fingerprint to next available User ID number)	1 (Fingerprint) (Repeat Fingerprint) (Repeat Fingerprint)
OR	
2. Select Specified ID (Allows Master to define a specific User ID to associate the fingerprint to)	1 (User ID) # (Fingerprint) (Repeat Fingerprint) (Repeat Fingerprint) (Repeat Fingerprint) (Repeat Fingerprint)

Add Card User

2. Using Auto ID (Allows the device to assign Card to next available User ID number)	1 (Read Card) / (Input 8/10/ 17 Digits Card Number) #
OR	
2. Select Specified ID (Allows Master to define a specific User ID to associate the card to)	1 (User ID) # (Read Card) / (Input 8/10/ 17 Digits Card Number) #
OR	
2. Add Card: Block Enrollment (Allows Master to add up to 990 cards to the Reader in a single step) Takes 2 minutes to program.	1 (User ID) # (Card Quantity) # (The First Card 8/10/ 17 Digits Number) # (Cards' number must be consecutive; Card quantity = number of cards to be enrolled.)

Add PIN User (Keypad version only)

2. Using Auto ID (Allows the device to assign PIN to next available User ID number)	1 (PIN) #
OR	
2. Select Specified ID (Allows manager to define a specific User ID to associate the PIN to)	1 (User ID) # (PIN) #
3. Exit	*

- 06 -

Tips for PIN Security (Only valid for 6 digits PIN):

For higher security we allow you to hide your correct PIN with other numbers up to a max of 10 digits.

Example PIN: 123434

You could use **123434** or ***(123434)

(* can be any numbers from 0-9)

Note: This function for keypad version only

Add Master Fingerprint (By Specified ID: 99, Fingerprint version only)

Programming Step	Keystroke Combination
1. Enter Program Mode	* (Master Code) #
1. Add Master Fingerprint	1 (99) # (Fingerprint) (Repeat Fingerprint) (Repeat Fingerprint) (Repeat Fingerprint)
3. Exit	*

Add Visitor Users (Valid for Card/ PIN Users)

(User ID number is 990-999; PIN length: 4-6 digits except 8888)

There are 10 groups Visitor PIN/card available, the users can be specified up to 10 times of usage, after a certain number of times, i.e. 5 times, the PIN/card become invalid automatically.

Programming Step	Keystroke Combination
1. Enter Program Mode	* (Master Code) #
2. Add Card	1 (User ID) # (0-9) # (Read Card) / (Input 8/10/ 17 Digits Card Number) #
OR	
2. Add PIN (Keypad version only)	1 (User ID) # (0-9) # (PIN) # (0-9 means times of usage, 0=10 times)
3. Exit	*

Change PIN Users (PIN length: 4-6 digits except 8888)

(Keypad version only)

Programming Step	Keystroke Combination
1. Enter Program Mode	* (Master Code) #
Note: Below is done outside programming mode, users can undertake this themselves	
Change PIN	* (User ID) # (Old PIN) # (New PIN) # (Repeat New PIN) #

- 07 -

Delete Users

Programming Step	Keystroke Combination
1. Enter Program Mode	* (Master Code) #
2. Delete User - By Fingerprint/ Card/ PIN	2 (Input Fingerprint/ (Read Card)/ (Input PIN) #
OR	
2. Delete User - By ID number	2 (User ID) #
OR	
2. Delete User - By Card number	2 (Input 8/10/ 17 Digits Card Number) #
2. Delete ALL Users	2 (Master Code) #
3. Exit	*

Set Relay Configuration

The relay configuration sets the behaviour of the output relay on activation.

Programming Step	Keystroke Combination
1. Enter Program Mode	* (Master Code) #
2. Pulse Mode	3 (1-99) # (factory default)
OR	
2. Toggle Mode	The relay time is 1-99 seconds. (Default is 5 seconds)
3. Exit	*

- 08 -

Simplified Instruction	
Function Description	Operation
Enter the Programming Mode	* - Master Code - # then you can do the programming (123456 is the factory default master code)
Change the Master Code	0 - New Code - # - Repeat the New Code - # (code: 6 digits)
Add Card User	1 - Read Card - # (can add cards continuously)
Add Fingerprint User	1-Fingerprint- Repeat Fingerprint- Repeat Fingerprint Again- #
Add PIN User	1 - PIN - # (The PIN is any 4-6 digits except 8888 which is reserved)
Delete User	2-Fingerprint- # 2-Read Card- # 2-PIN- #
Exit from the Programming Mode	*
How to release the door	
Fingerprint User	Input Fingerprint
Card User	Read Card
PIN User	Input PIN #
# Note: "Fingerprint" for Fingerprint version only "PIN" for Keypad version only	

- 09 -

Set Access Mode

For Multi user access mode, the interval time of reading can not exceed 5 seconds, or else, the device will exit to standby automatically.

Programming Step	Keystroke Combination
1. Enter Program Mode	* (Master Code) #
2. Fingerprint Access	4 0 # (Fingerprint version only)
OR	
2. Card Access	4 1 # (factory default for RFID version only)
OR	
2. PIN Access	4 2 # (Keypad version only)
OR	
2. Multi User Access	4 3 (2-9) # (Only after 2-9 valid users, the door be opened)
OR	
2. Fingerprint or Card or PIN Access	4 4 # (factory default for Fingerprint / Keypad version)
3. Exit	*

Set Strike-out Alarm

The strike-out alarm will engage after 10 failed enter attempts (Factory is OFF). It can be set to deny access for 10 minutes after engaging or disengage only after entering a valid Fingerprint/ card/ PIN or Master code/ fingerprint/ card.

Programming Step	Keystroke Combination
1. Enter Program Mode	* (Master Code) #
2. Strike-Out OFF	6 0 # (factory default)
OR	
2. Strike-Out ON	6 1 # (The PIN is any 4-6 digits except 8888 which is reserved) (Exit button is still workable)
OR	
2. Strike-Out ON (Alarm)	6 2 #
Set Alarm Time	5 (0 - 3) # (factory default is 1 minute) Enter Master Code # or Master Fingerprint/ Card or valid user fingerprint / card / PIN to silence
3. Exit	*

- 10 -

Set Audible and Visual Response

Programming Step	Keystroke Combination
1. Enter Program Mode	* (Master Code) #
2. Disable Sound	7 0 #
Enable Sound	7 1 # (factory default)
OR	
2. LED Always OFF	7 2 #
LED Always ON	7 3 # (factory default)
OR	
2. Keypad Backlit Always OFF	7 4 #
Keypad Backlit Always ON	7 5 #
Keypad Backlit Automatic OFF	7 6 # (factory default)
Automatic OFF after 20 seconds, it will go ON by pressing any key (this key isn't taken into consideration)	
3. Exit	*

Users Operation & Reset to Factory Default

> **Open the door:** Read valid user fingerprint or user card or input valid user PIN #

> **Remove Alarm:** Enter Master Code # or Master Fingerprint/ Card or valid user fingerprint / card / PIN

> **To reset to factory default & Add Master Card:** Power off, press the Exit Button, hold it and power on, there will be two beeps, then release the exit button, the LED light turns into yellow, then read any 125KHz EM card/ 13.56MHz Mifare Card, the LED will turn into red, means reset to factory default successfully. Of the card reading, it is the Master Card.

Remarks:

- ① If no Master Card added, must press the Exit Button for at least 5 seconds before release. (this will make the previous registered Master Card invalid)
- ② Reset to factory default, the user's information is still retained.

- 11 -

Master Fingerprint/ Card Usage

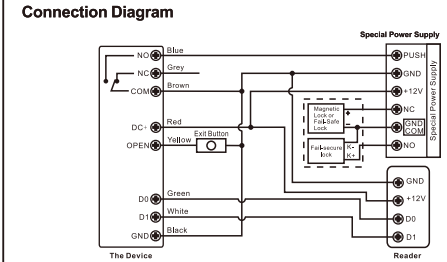
(Master Card is not default accessory in the box, please add it by yourself if needed)

Programming Step	Keystroke Combination
1. Enter Program Mode	* (Master Code) #
Using Master Fingerprint/ Card to add and delete users	
Add Fingerprint/ Card/ PIN Users	1. Input (Master Fingerprint / Card) or (Card) or (PIN) # Repeat step 2 for additional users 3. Input (Master Fingerprint / Card) again
Delete Fingerprint/ Card/ PIN Users	1. Input (Master Fingerprint / Card) Twice within 5s 2. Input (Fingerprint) or (Card) or (PIN) # Repeat step 2 for additional users 3. Input (Master Fingerprint/ Card) again
# Note: "Master Fingerprint" for Fingerprint version only	

CONTROLLER MODE

The device can work as Controller, connected with the external Wiegand reader. (Factory default mode) --- 7 7 #

Connection Diagram



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)

- 12 -

Set Wiegand Input Formats

Please set the Wiegand input formats according to the Wiegand output format of the external Reader.

Programming Step	Keystroke Combination
1. Enter Program Mode	* (Master Code) #
2. Wiegand Input Bit	For EM Card: 8 (26- 44) # (factory default is 26bits) For Mifare Card: 8 0 (26-44, 56, 58) # (factory default is 34bits)
3. Disable Parity Bit	8 0 #
Enable Parity Bit	8 1 # (factory default)
4. Exit	*

Remarks: 4 means 4 bits, 8 means 8 bits, 10 means 10 digits virtual number.

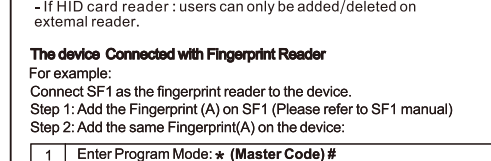
> **Add PIN Users:**
To add PIN users, after enter into programming mode on the device, PIN(s) can be input/ added on either the device or the external Keypad Reader.

> **Delete PIN Users:** the same way as add users.

WIEGAND READER MODE

The device can work as Standard Wiegand Reader, connected to the third party Controller --- 7 8 #

Connection Diagram



The device Connected with Fingerprint Reader

For example:
Connect SF1 as the fingerprint reader to the device.

Step 1: Add the Fingerprint (A) on SF1 (Please refer to SF1 manual)

Step 2: Add the same Fingerprint(A) on the device:

1	Enter Program Mode: * (Master Code) #
2	1 (Press Fingerprint A once on SF1) # (ID auto allocated)