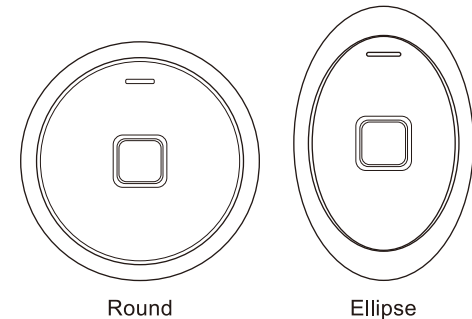


Fingerprint & RFID Access Control



User Manual

INTRODUCTION

The device is a single door standalone access control with Wiegand input & output. It uses Atmel MCU assuring stable performance. The operation is very user-friendly, and low-power circuit makes it long service life.

The device supports 1,000 users (990 common users + 10 visitor users). It equips with an infrared remote control and master card for easy operation, supports multi access modes in card access, fingerprint access, or multi-cards/ fingerprint access.

Optional Version:
The device with Bluetooth-enabled. People can install the Bluetooth APP to easily access the door with their smartphone. (APP operation can refer from APP manual)

Features

- > Capacitive fingerprint sensor
- > Waterproof, conform to IP66
- > Vandal resistant metal enclosure
- > One relay, 1,000 users (990 common + 10 visitor)
- > Card Type: 125KHz EM Card/13.56MHz Mifare Card (optional)
- > Wiegand 26 bits output, Wiegand 26/34bits input automatic identification
- > Card block enrollment
- > Tri-color LED status display
- > Pulse mode, Toggle mode

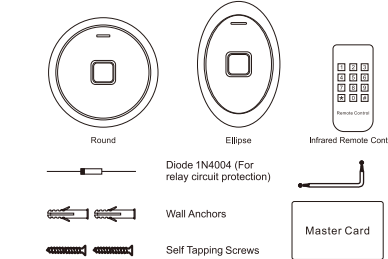
Specifications

User Capacity Common User Visitor User	1000 990 10
Operating Voltage Working Current Idle Current	12~18V DC ≤150mA ≤60mA
Proximity Card Reader Radio Technology Read Range	EM or Mifare 125KHz / 13.56MHz 2~6 cm
Wiring Connections	Relay Output, Exit Button, Wiegand Input, Wiegand Output

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Relay Adjustable Relay Output Time Lock Output Load	One (NO, NC, Common) 0~99 Seconds (5 seconds default) 2 Amp Maximum
Wiegand Interface	Wiegand 26 bits output Wiegand 26/34bits input automatic identification
Environment Operating Temperature Operating Humidity	Outdoor -30°C ~ 60°C (-22°F ~ 140°F) 0%RH~98%RH
Physical Surface Finish Dimensions Unit Weight Shipping Weight	Zinc-Alloy Powder Coat Ø73 x H20mm (Round) L105 x W69 x H20(Ellipse) 159g (Round) 220g (Ellipse) 225g (Round) 285g (Ellipse)

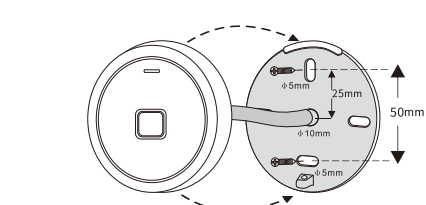
Carton Inventory



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

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Wiring

Colour	Function	Notes
Red	Power +	12~18 Volts DC Regulated Power Input
Black	GND	Ground
Blue	NO	Normally Open Relay Output
Brown	COM	Common Connection for Relay Output
Grey	NC	Normally Closed Relay Output
Yellow	OPEN	Request to Exit input(REX)
Green	D0	Wiegand Input/Output Data 0
White	D1	Wiegand Input/Output Data 1

Sound and Light Indication

Operation Status	LED	Buzzer
Stand by	Red light shines	—
Enter into programming mode	Red light shines	One beep
In the programming mode	Orange light bright	One beep
Operation error	Red light bright	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

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Basic Configure

Enter and Exit Program Mode

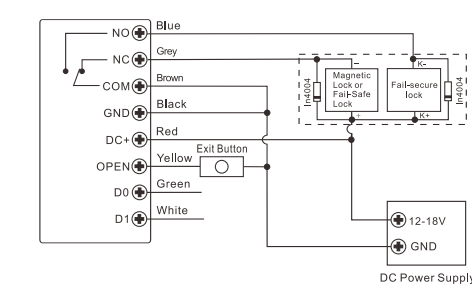
Programming Step	Keystroke Combination
Enter Program Mode	* (Master Code) # (Factory default is 123456)
Exit Program Mode	*

Set Master Code

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

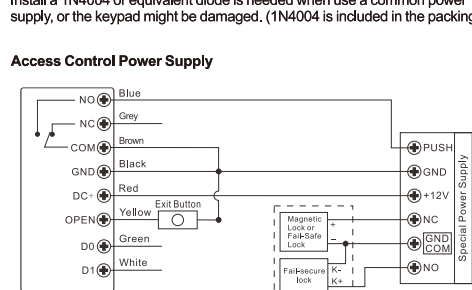
Connection Diagram

Common Power Supply



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Access Control Power Supply



Programming

Programming will be very 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 in order to track it.

The Common User ID:

- Fingerprint user ID: 0 ~ 98
 - Card user ID: 100 ~ 999
 - Master Fingerprint User ID: 99
 - 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 or 13.56MHz Mifare card

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Add Common Users

(Fingerprint user ID: 0 ~ 98, Card user ID: 100 ~ 999)

Programming Step	Keystroke Combination
1. Enter Program Mode	* (Master Code) #
Add Fingerprint User	
2. Using Auto ID (Allows the device to assign Fingerprint to next available User ID number)	1 (Fingerprint) (Repeat Fingerprint) (Repeat Fingerprint again)
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 again)

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) # The cards can be added continuously.
OR	
2. Select Specific 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 998 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.
3. Exit	*

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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- #
Delete User	2-Fingerprint- #
Exit from the Programming Mode	*
How to release the door	
Fingerprint User	Input Fingerprint
Card User	Read Card

Add Master Fingerprint (By specified ID: 99)

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

Add Visitor Users (Valid for Card Users)

(User ID number is 990~999)
There are 10 groups Visitor card available, the users can be specified up to 10 times of usage, after a certain number of times, i.e. 5 times, the 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) # (0~9 means times of usage, 0~10 times)
3. Exit	*

Delete Users

Programming Step	Keystroke Combination
1. Enter Program Mode	* (Master Code) #
2. Delete User- By Fingerprint/ Card	2 (Input Fingerprint) (Read Card)
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) #
OR	
2. Delete ALL Users	2 (Master Code) #
3. Exit	*

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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 OR	3 (1~99) # (factory default) The relay time is 1~99 seconds. (Default is 5 seconds)
2. Toggle Mode	3 0 # Sets the relay to ON/OFF Toggle mode
3. Exit	*

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 OR	4 0 #
2. Card Access	4 1 #
OR	
2. Fingerprint or Card Access	4 2 #
OR	
2. Multi User Access	4 3 (2~9) # (Only after 2~9 valid users, the door be opened)
3. Exit	*

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Set Strike-out Alarm

The strike-out alarm will engage after 10 failed entry 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 or Master code/ fingerprint/ card.

Programming Step	Keystroke Combination
1. Enter Program Mode	* (Master Code) #
2. Strike-Out OFF OR	6 0 # (factory default)
2. Strike-Out ON	6 1 # Access will be denied for 10 minutes (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 to silence
3. Exit	*

Set Audible and Visual Response

Programming Step	Keystroke Combination
1. Enter Program Mode	* (Master Code) #
2. Disable Sound Enable Sound	7 0 # 7 1 # (factory default)
OR	
2. LED Always OFF LED Always ON	7 2 # 7 3 # (factory default)
3. Exit	*

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WIEGAND MODE

Pass-through Mode

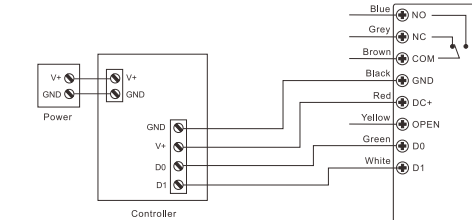
(The device Operates as a Wiegand Output Reader)

In this mode the device supports a Wiegand 26 bits output so the Wiegand data lines can be connected to any controller which supports a Wiegand 26 bits input, and then the device will operate as a slave reader.

Fingerprint Users Transmission Format

- 1) Add fingerprint on device
- 2) Operate the controller enter into adding card users, then read this added fingerprint on the device, this fingerprint's corresponding User ID will generate a virtual card number and send to the controller.
Example: User ID is 2 for the added fingerprint, the output will be 00000002

Wiring Diagram



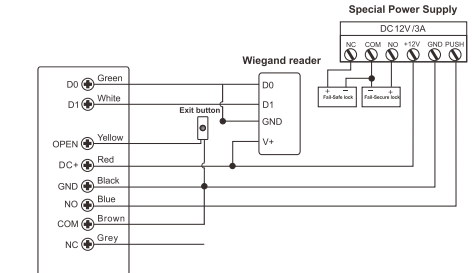
Controller Mode

(The device Operates as a Controller)

It supports Wiegand 26/34 bits input (Automatic Identification), so an external Wiegand device with 26/34 bits output can be connected to the Wiegand input terminals on the device. Either an EM card reader (125 KHz) or a Mifare card reader (13.56MHz) can be connected to the device.
Cards are required to be added at the external reader, except where an external EM card Reader is used, in this case cards can be added at either reader or controller.

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Wiring Diagram



OTHERS

Users Operation & Reset to Factory Default

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

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

> **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.

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Master Fingerprint/ Card Usage

Using Master Fingerprint/ Card to add and delete users	
Add Fingerprint / Card Users	1. Input (Master Fingerprint/ Card) 2. Input (Fingerprint three times) or (Card) Repeat step 2 for additional users 3. Input (Master Fingerprint/ Card) again
Delete Fingerprint / Card Users	1. Input (Master Fingerprint/ Card Twice within 5s) 2. Input (Fingerprint) or (Card) Repeat step 2 for additional users 3. Input (Master Fingerprint/ Card) again

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