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INTRODUCTION

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

The device can be made with WIFI version.

Features

- > Metal case, anti-vandal
- > Waterproof, conforms to IP66
- > PIN length: 4-6 digits
- > EM card, EM+HID cards, Mifare card, EM+HID+Mifare cards optional
- > EM card: Wiegand 26-44 bits input & output
- > Mifare card: Wiegand 26-44bits, 56bits, 58bits input & output
- > Can be used as Wiegand reader with LED & buzzer output
- > Card block enrollment
- > Tri-color LED status display
- > Integrated alarm & buzzer output
- > Pulse mode, Toggle mode
- > User data can be transferred (except fingerprint users)
- > 2 devices can be interlocked for 2 doors
- > Built-in light dependent resistor (LDR) for anti tamper
- > Backlit keypad, can set automatic OFF after 20 seconds

Specifications

Version	Fingerprint version	Non-fingerprint version
User Capacity	10500	10000
Common Card/PIN User	9988	9988
Fingerprint User	500	
Panic User	2	2
Visitor User	10	10
Operating Voltage	12V DC	
Working Current	≤150mA	
Idle Current	≤60mA	
Proximity Card Reader	EM/EM+HID/Mifare/EM+HID+Mifare	
Radio Technology	125KHz/13.56MHz/125KHz+13.56MHz	
Read Range	2-8 digits	
PIN Length	4-6 digits	
Wiring Connections	Relay Output, Exit Button, Alarm, Door Contact, Wiegand Input, Wiegand Output	

INSTALLATION

Relay
Adjustable Relay Output Time
Lock Output Load

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)

PIN Output
4 bits, 8 bits(ASCII), 10 digits Virtual Number
(Factory Default: 4 bits)

Environment
Operating Temperature
-30°C ~ 60°C (-22°F ~ 140°F)
Non-fingerprint version:
-40°C ~ 60°C (-40°F ~ 140°F)
0%RH~98%RH

Physical
Colour
Dimensions
Unit Weight
Shipping Weight

Meets IP66
Fingerprint version:
-30°C ~ 60°C (-22°F ~ 140°F)
Non-fingerprint version:
-40°C ~ 60°C (-40°F ~ 140°F)
0%RH~98%RH

Zinc-Alloy
Silver & Black
L135 x W55 x D25 (mm)
400g
480g

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

Wiring (for Slim device)

Wire Color	Function	Notes
Red	DC+	12V DC Power Input
Black	GND	Negative Pole of DC Power Input
Blue & Black	Relay NO	Normally Open Relay Output (install diode provided)
White & Black	Relay Common	Common Connection for Relay Output
Green & Black	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
Advanced Input and Output Features		
Grey	Alarm Output	Negative contact for Alarm
Brown	Contact Input	Door/Gate Contact Input (Normally Closed)

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) #
2. Update Master Code	0 (New Master Code) # (Repeat New Master Code) # (Master code is any 6 digits)
3. Exit Program Mode	*

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)
OR	
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

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

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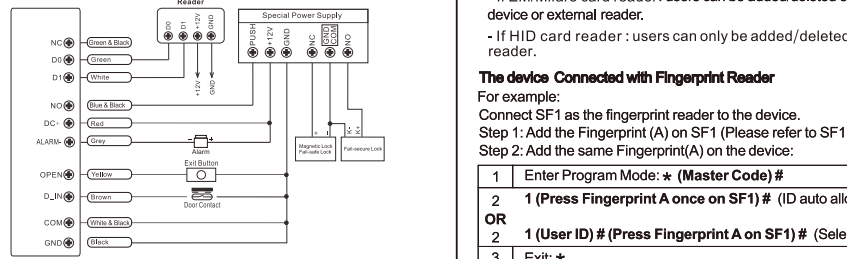
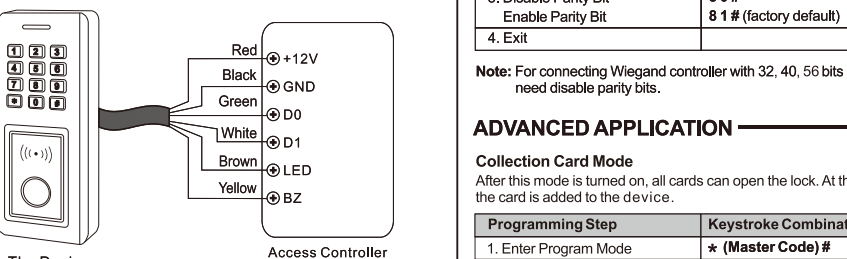
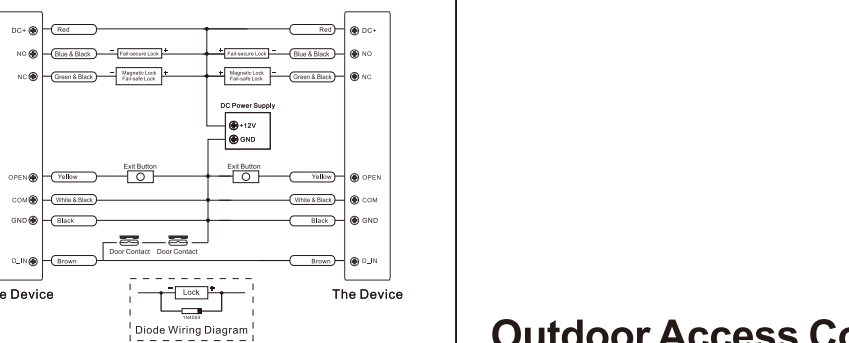
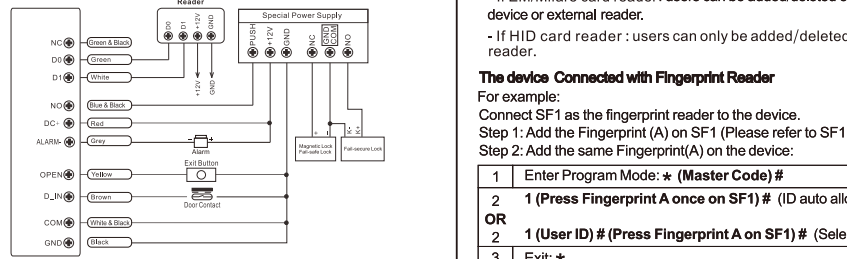
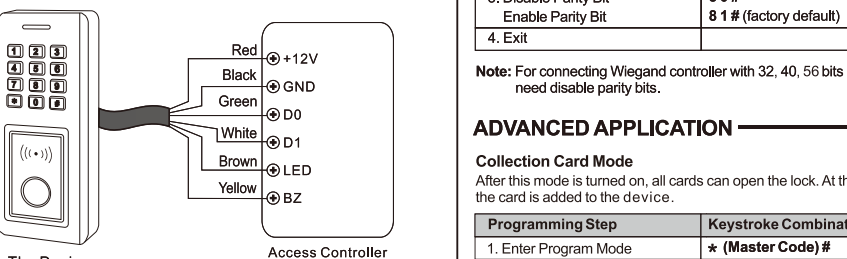
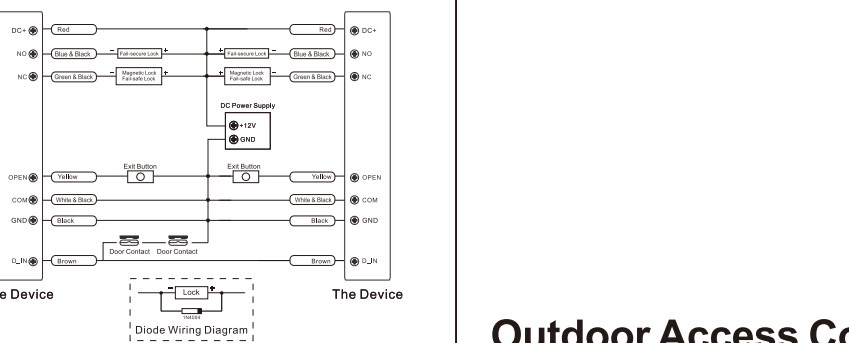
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Access Control Power Supply

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 3 # (factory default) 3. Exit *	<table><tr><th>Programming Step</th><th>Keystroke Combination</th></tr><tr><td>1. Enter Program Mode</td><td>*(Master Code) #</td></tr><tr><td>2. Disable Door Open Detection</td><td>6 3 # (factory default)</td></tr><tr><td>OR</td><td></td></tr><tr><td>2. Enable Door Open Detection</td><td>6 4 #</td></tr><tr><td>Set Alarm Time</td><td>5 (0-3) # (factory default is 1 minute)</td></tr><tr><td>3. Exit</td><td>*</td></tr></table>	Programming Step	Keystroke Combination	1. Enter Program Mode	*(Master Code) #	2. Disable Door Open Detection	6 3 # (factory default)	OR		2. Enable Door Open Detection	6 4 #	Set Alarm Time	5 (0-3) # (factory default is 1 minute)	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. CONTROLLER MODE The device can work as Controller, connected with the external Wiegand reader. (Factory default mode) — 7 7 # Connection Diagram 	The device Connected with Keypad Reader The keypad reader can be 4 Bits, 8 Bits (ASCII), or 10 Bits output format. Choose the below operation according to the PIN output format of your reader. <table><tr><th>Programming Step</th><th>Keystroke Combination</th></tr><tr><td>1. Enter Program Mode</td><td>*(Master Code) #</td></tr><tr><td>2. Wiegand Input Bit</td><td>For EM Card: 8 (26-44) # (factory default is 26bits) For Mifare Card: 8 0 (26-44, 56, 58) # (factory default is 34bits)</td></tr><tr><td>3. Disable Parity Bit</td><td>8 0 #</td></tr><tr><td>Enable Parity Bit</td><td>8 1 # (factory default)</td></tr><tr><td>4. Exit</td><td>*</td></tr></table> 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. 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Exit	*	User Information Transfer (Valid for Card / PIN Users) The device supports the User Information Transfer function, and the enrolled user (cards, PINs) can be transferred from one (let's name it Master Unit) to another (let's name it Accept Unit). Connection Diagram:  Remarks: > The Master units and Accept units must be same series devices. > The Master Code of the Master Unit and the Accept Unit must be set to the same. > Program the transfer operation on Master Unit only. > If the Accept Unit is already with the users enrolled, it will be covered after transferring. > For full users enrolled, the transfer takes about 30 seconds. Step 1: Enroll the users on Device A, then transfer the users' information to Device B by "User Information Transfer" function. Step 2: Set both of the two Devices (A and B) to Interlock function <table><tr><th>Programming Step</th><th>Keystroke Combination</th></tr><tr><td>1. Enter Program Mode</td><td>*(Master Code) #</td></tr><tr><td>2. 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Simplified Instruction <table><tr><th>Function Description</th><th>Operation</th></tr><tr><td>Enter the Programming Mode</td><td>*(Master Code) - # then you can do the programming (123456 is the factory default master code)</td></tr><tr><td>Change the Master Code</td><td>0 - New Code - # - Repeat the New Code - # (code: 6 digits)</td></tr><tr><td>Add Card User</td><td>1-Read Card-# (can add cards continuously)</td></tr><tr><td>Add Fingerprint User (Fingerprint version)</td><td>1-Fingerprint-Repeat Fingerprint-Repeat Fingerprint Again-#</td></tr><tr><td>Add PIN User</td><td>1 (User ID) - PIN - # (The PIN is any 4-6 digits)</td></tr><tr><td>Delete User</td><td>2-Fingerprint-# (Fingerprint version) 2-Read Card-# 2-User ID-#</td></tr><tr><td>Exit from the Programming Mode</td><td>*</td></tr></table> How to release the door <table><tr><td>Fingerprint User</td><td>Input Fingerprint (Fingerprint version)</td></tr><tr><td>Card User</td><td>Read Card</td></tr><tr><td>PIN User</td><td>Input PIN #</td></tr></table>	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 (Fingerprint version)	1-Fingerprint-Repeat Fingerprint-Repeat Fingerprint Again-#	Add PIN User	1 (User ID) - PIN - # (The PIN is any 4-6 digits)	Delete User	2-Fingerprint-# (Fingerprint version) 2-Read Card-# 2-User ID-#	Exit from the Programming Mode	*	Fingerprint User	Input Fingerprint (Fingerprint version)	Card User	Read Card	PIN User	Input PIN #	The function of Set Alarm Time also apply for anti-tamper alarm Set Audible and Visual Response <table><tr><th>Programming Step</th><th>Keystroke Combination</th></tr><tr><td>1. 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Set Wiegand Output Formats Please set the Wiegand output formats of Reader according to the Wiegand input formats of the Controller. <table><tr><th>Programming Step</th><th>Keystroke Combination</th></tr><tr><td>1. Enter Program Mode</td><td>*(Master Code) #</td></tr><tr><td>2. Wiegand output bits</td><td>For EM Card: 8 (26-44) # (factory default is 26bits) For Mifare Card: 8 0 (26-44, 56, 58) # (factory default is 34bits) 8 (4 or 8 or 10) # (factory default is 4 bits)</td></tr><tr><td>PIN output bits</td><td></td></tr><tr><td>3. Disable Parity Bit</td><td>8 0 #</td></tr><tr><td>Enable Parity Bit</td><td>8 1 # (factory default)</td></tr><tr><td>4. Exit</td><td>*</td></tr></table> Notes: For connecting Wiegand controller with 32, 40, 56 bits input, need disable parity bits. Collection Card Mode After this mode is turned on, all cards can open the lock. At the same time, the card is added to the device. <table><tr><th>Programming Step</th><th>Keystroke Combination</th></tr><tr><td>1. 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Exit	*	User Information Transfer (Valid for Card / PIN Users) The device supports the User Information Transfer function, and the enrolled user (cards, PINs) can be transferred from one (let's name it Master Unit) to another (let's name it Accept Unit). Connection Diagram:  Remarks: > The Master units and Accept units must be same series devices. > The Master Code of the Master Unit and the Accept Unit must be set to the same. > Program the transfer operation on Master Unit only. > If the Accept Unit is already with the users enrolled, it will be covered after transferring. > For full users enrolled, the transfer takes about 30 seconds. Step 1: Enroll the users on Device A, then transfer the users' information to Device B by "User Information Transfer" function. Step 2: Set both of the two Devices (A and B) to Interlock function <table><tr><th>Programming Step</th><th>Keystroke Combination</th></tr><tr><td>1. Enter Program Mode</td><td>*(Master Code) #</td></tr><tr><td>2. Disable Interlock</td><td>9 0 # (factory default)</td></tr><tr><td>OR</td><td></td></tr><tr><td>2. Enable Interlock</td><td>9 1 #</td></tr><tr><td>3. Exit</td><td>*</td></tr></table> If enable interlock, when and only door 2 is closed, the user can read the valid fingerprint/card or input PIN on Reader A, door 1 will open; then when and only door 1 closed, read valid fingerprint/card or input PIN on Reader B, door 2 will open.	Programming Step	Keystroke Combination	1. Enter Program Mode	*(Master Code) #	2. Disable Interlock	9 0 # (factory default)	OR		2. Enable Interlock	9 1 #	3. Exit	*
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 (Fingerprint version)	1-Fingerprint-Repeat Fingerprint-Repeat Fingerprint Again-#																																																																																																										
Add PIN User	1 (User ID) - PIN - # (The PIN is any 4-6 digits)																																																																																																										
Delete User	2-Fingerprint-# (Fingerprint version) 2-Read Card-# 2-User ID-#																																																																																																										
Exit from the Programming Mode	*																																																																																																										
Fingerprint User	Input Fingerprint (Fingerprint version)																																																																																																										
Card User	Read Card																																																																																																										
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OR																																																																																																											
2. LED Always OFF	7 2 #																																																																																																										
LED Always ON	7 3 # (factory default)																																																																																																										
3. Exit	*																																																																																																										
1. Input (Master Fingerprint / Card)																																																																																																											
2. Input (Fingerprint three times) or (Card) or (User ID#PIN#)																																																																																																											
Repeat step 2 for additional users																																																																																																											
3. Input (Master Fingerprint / Card) again																																																																																																											
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Outdoor Access Control

(Standalone/ Controller/ Reader)