Waterproof
Fingerprint & RFID Access Control

User Manual

INTRODUCTION

The device is a waterproof metal case standalone fingerprint access control with integrated card reader. IP66 waterproof makes it very suitable for outdoor use.

The device supports up to 1000 users (Card user/ Fingerprint user), with Wiegand 26~37 bits output, it can also work as a slave reader to connect to a 3rd party controller.

The device supports fingerprint access,card access and multi users access; with external alarm, door contact, exit button.

Main Features:

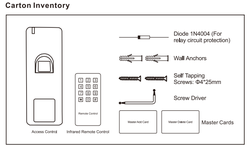
- Waterproof, conforms to IP66
- Metal case, anti-vandal
- One programming relay output
- 1000 users (Card / Fingerprint)
- Wiegand 26~37 bits output
- Standalone or Pass-through operation
- Multi Cards / fingerprints access
- 2 devices support interlock for 2 doors
- Latch Mode to hold door or gate open
- Anti-tamper alarm
- Multi-color LED status display

Specifications:

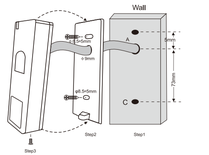
Frequency	125KHz	125KHz	13,56MHz
Card Type	EM tag / card	HID & EM tags / cards	Mifare tag / card (ISO14443 Type A)
User Capacity		**1000 (Card / Fingerprint)**	
Operating Voltage Idle Current Active Current		**12~18V DC** **<60mA** **<150mA**	
Fingerprint Reader Resolution Identification Time FAR FRR		**Optical Fingerprint Module** 500DPI ≤1S <0.01% <0.1%	
Read Range		**1~3cm**	

Wiring Connections	**Relay Output, Exit Button, DOTL, Alarm, Wiegand Output**
Relay Adjustable Relay Output Time Adjustable Alarm Output Time Lock Output Load Alarm Output Load	**One (NO, NC, Common)** 0-99 Seconds (default: 5 seconds) 0-3 Minutes (default: 1 minute) 2 Amp Maximum 5 Amp Maximum
Wiegand Interface	**Wiegand 26~37 bits output** (default: 26bits)
Environment Operating Temperature Operating Humidity	**Meets IP66** -25°C~60°C (-13°F~140°F) - Default -40°C~60°C (-40°F~140°F) - Optional 20%RH-90%RH
Physical Surface Finish Dimensions Unit Weight Shipping Weight	**Zinc-alloy Enclosure** Powder Coat L128 x W48 x D26 (mm) 400g 500g

Carton Inventory



INSTALLATION



Wiring

Wire Color	Function	Notes
		Basic Stand Alone Wiring
Red	12V DC	12V DC Regulated Power Input
Black	GND	Ground
Blue	Relay NO	Normally Open Relay Output (Install diode provided)
Purple	Relay Common	Common Connection for Relay Output
Orange	Relay NC	Normally Closed Relay Output (Install diode provided)
Yellow	OPEN	Request to Exit (REX) Input
		Pass -through Wiring (Wiegand Reader)
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	Finger Sensor Light	Buzzer
Stand by	Red light bright	Off	-
Enter into programming mode	Red light shines	Off	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	Off	One beep
Alarm	Red light Shines quickly	Off	Beeps

Basic Configure

Set the Working Mode

Notes: The device has 2 working modes: Standalone Mode,Wiegand Reader Mode, choose the mode you use. (Factory default is Standalone Mode)

Programming Step	Keystroke Combination
1. Enter Program Mode	*** (Master Code) #**
2. Standalone Mode **OR** 2. Wiegand Reader Mode	**7 4 # (Factory Default)** **7 5 #**
3. Exit	*

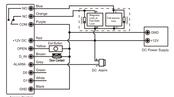
STANDALONE MODE

The device can work as Standalone Access Control for single door.
(Factory default mode)– 7 4 #

Connection Diagram

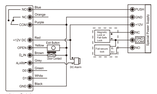
Lock 1: Fail-Safe Lock or Door/Gate Operator
Lock 2: Fail-Secure Lock or Magnetic Lock

Common 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 Power Supply



Pass-through: Please check No.4 Pass-through Operation

Programming

GENERAL PROGRAMMING INFORMATION

- **User ID Number:** Assign a user ID number in order to keep track of the users of access fingerprints or Cards.The user ID number is from 1~1000, one ID can add one Card & one Fingerprint.
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 or Card be available.

> **Card Type:**
EM version: Any 125KHz industry standard 26bits EM proximity tag / card
HID & EM version: Any 125KHz industry standard 26bits
HID & EM proximity tag / card
Mifare version: 13.56MHz Mifare tag / card (ISO14443 Type A)
Remark: For Mifare version, SF1 is not good at reading cards, please place the 4 corners of the card on the card reading area. (see the picture on the right)

Set Master Code

Programming Step	Keystroke Combination
1. Enter Program Mode	*** (Master Code) #** *(Factory default is 123456)*
2. Update Master Code	**0 (New Master Code) # (Repeat New Master Code) #** *(Master code is any 6 digits)*
3. Exit Program Mode	*

Add Fingerprint Users by Auto ID

Programming Step	Keystroke Combination
1. Enter Program Mode	*** (Master Code) #**
2. Add Fingerprint	**1 (Fingerprint) (Repeat Fingerprint)** Fingerprints can be added continuously
3. Exit	*

Add Fingerprint Users by Specific ID

Programming Step	Keystroke Combination
1. Enter Program Mode	*** (Master Code) #**
2. Add Fingerprint	**1 (User ID) # (Fingerprint) (Repeat Fingerprint)** Fingerprints can be added continuously
3. Exit	*

Simplified Instruction	
Function Description	**Operation**
Enter the Programming Mode	*** - 123456 - #** *then you can do the programming* *(123456 is the default factory master code)*
Change the Master Code	**0 - New code - # - Repeat the New Code - #** *(code: 6 digits)*
Add Fingerprint User	**1 - Fingerprint - Repeat Fingerprint - #** *(can add fingerprints continuously)*
Add Card User	**1 - Read Card - #** *(can add cards continuously)*
Delete User	**2 - Fingerprint - #** **2 - Read Card - #** **2 - User ID - #** *(can delete users continuously)*
Exit from the Programming Mode	*
How to release the door	
Fingerprint User	Input Fingerprint
Card User	Read Card

Add Card Users by Auto ID

Programming Step	Keystroke Combination
1. Enter Program Mode	*** (Master Code) #**
2. Add Card : by Reading Card **OR** 2. Add Card : by Card Number	**1 (Read Card)** Cards can be added continuously **1 (Input 8/10 Digits Card Number) #**
3. Exit	*

Add Card Users by Specific ID

Programming Step	Keystroke Combination
1. Enter Program Mode	*** (Master Code) #**
2. Add Card : by Reading Card **OR** 2. Add Card : by Card Number **OR** 2. Add Card: by Block Enrollment	**1 (User ID) # (Read Card)** Cards can be added continuously **1 (User ID) # (Input 8/10 Digits Card Number) #** **1 (User ID) # (Card Quantity) # (Input 8/10 Digits Card Number of the First Card) #**
3, Exit	*

Delete Users

Programming Step	Keystroke Combination
1. Enter Program Mode	*** (Master Code) #**
2. Delete Fingerprint: by Fingerprint **OR** 2. Delete Card: by Reading Card **OR** 2. Delete Card: by Card Number **OR** 2. Delete Card or Fingerprint : by ID Number **OR** 2. Delete ALL Users	**2 (Input Fingerprint)** Fingerprints can be deleted continuously **2 (Read Card)** Cards can be deleted continuously **2 (Input 8/10 Digits Card Number) #** **2 (User ID) #** **2 (Master Code) #**
3, Exit	*

Add Master Card/Fingerprint Users

(Master Card/Fingerprint User ID is 1001,1002,can add by User ID or Refer to Page 10 "To reset to factory default & Add Master Card/Fingerprints" to Add Master Cards/Fingerprints)

Programming Step	Keystroke Combination
1. Enter Program Mode	*** (Master Code) #**
2. Add Master Card **OR** 2. Add Master Fingerprint	**1(User ID)#(Read Card)** **1(User ID)#(Fingerprint)(Repeat Fingerprint)**
3. Exit	*

Master Cards Usage

Using Master Cards to add and delete users

Add Card or Fingerprint User	1. Read Master Add Card 2. Read User Card / Input Fingerprint Twice (Repeat Step 2 for additional users) 3. Read Master Add Card Again
Delete Card or Fingerprint User	1. Read Master Delete Card 2. Read User Card / Input Fingerprint Once (Repeat Step 2 for additional users) 3. Read Master Delete Card Again

Remark: can also use Master Fingerprints to add and delete users, the operations are the same with Master Cards.

Set Relay Configuration

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

Programming Step	Keystroke Combination
1. Enter Program Mode	*** (Master Code) #**
2. Pulse Mode **OR** 2. Latch Mode	**3 (1-99) #** *(Factory default)* The relay time is 1~99 seconds (1 is 100ms) *(Factory default: 5 seconds)* **3 0 #** Sets the relay to ON/OFF latch mode
3. Exit	*

Set Access Mode

> Card+Fingerprint: Card and Fingerprint must use the same user ID,for example add Card by user ID 2,must add Fingerprint user also by User ID 2;

> Multi Cards/Fingerprint Access:
For Multi Cards / Fingerprints access mode, the interval time of inputting Cards/Fingerprints can not exceed 5 seconds, or else, the device will exit to standby automatically;

> In each access, the same Card or fingerprint can not be used repeatedly, or else, the device will exit to standby automatically.

Programming Step	Keystroke Combination
1. Enter Program Mode	*** (Master Code) #**
2. Card Access ONLY **OR** 2. Fingerprint Access ONLY **OR** 2. Card + Fingerprint Access **OR** 2. Card or Fingerprint Access **OR** 2. Multi Cards / Fingerprints Access	**4 0 #** **4 1 #** **4 3 #** **4 4 #** *(factory default)* **4 5 (2~5) #**
3. Exit	*

Set Alarm

Programming Step	Keystroke Combination
1. Enter Program Mode	*** (Master Code) #**
2.Enable Alarm **OR** 2.Disable Alarm	**5(1~3) #** *(factory default: 1 minute)* **5 0 #**
3. Exit	*

Set Strike-out Alarm

The strike-out alarm will engage after 10 failed Card/Fingerprint attempts, factory default is OFF, it can be set to deny access for 10 minutes or enable alarm after engaging.

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

Set Door Open Detection

Door Open Too Long (DOTL) Detection
When use with an optional magnetic contact or built-in magnetic contact of the lock, if the door is opened normally, but not closed after 1 minute, the inside buzzer will beep automatically to remind people to close the door. The beep can be stopped by closing the door, master users or valid users, or else, it will continue to beep the same time with the alarm time set.

Door Forced Open Detection
When use with an optional magnetic contact or built-in magnetic contact of the lock, if the door is opened by force, the inside buzzer and external alarm (if there is) will both operate, they can be stopped by master users or valid users, or else, it will continue to sound the same time with the alarm time set.

Programming Step	Keystroke Combination
1. Enter Program Mode	*** (Master Code) #**
2. Disable Door Open Detection **OR** 2. Enable Door Open Detection	**6 3 #** *(Factory Default)* **6 4 #**
3. Exit	*

Users Operation & Reset to Factory Default

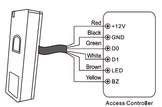
> **Open the door**: Input valid Card user or input valid fingerprint.
> **Open the door in Multi Cards / Fingerprints Mode:** Input valid multi Cards or fingerprints within 5 seconds.
> **Remove Alarm:** Input valid user Card or input valid fingerprint, or input master fingerprints or input Master Code #.
> **To reset to factory default & Add Master Cards/Fingerprints:** Power off, press the Exit Button, hold it and power on, there will be two beeps, release the button, the LED light turns into Orange, which means entered into Add Master Fingerprints mode, the first fingerprint (input for twice) entered is Master Add Fingerprint, the second fingerprint (input for twice) entered is Master Delete Fingerprint,this step need to finish within 30 seconds, then the LED light turns into RED, means reset to factory default successfully.

Remarks:
> Master Card Users also can add when Reset to factory default,the operation same with Master Fingerprints
> If no Master Cards/fingerprints added, must press the Exit Button for at least 30 seconds before release,at the same time,the Previously Master Fingerprints will be deleted.
> Reset to factory default, the user's information is still retained.

PASS-THROUGH OPERATION

The device can work as a Wiegand output reader to the controller -- 7 5 #,
Below the operations for adding fingerprint users:
1.Add fingerprint on the reader (refer to Page 06),
2.Operate the controller to enter into adding Card users, then read this added fingerprint on the reader, this fingerprint's corresponding User ID will generate a virtual Card number and send to the controller, the controller save this number, and then the fingerprint added successfully.

Connection Diagram



Notes:
> When set into Wiegand Reader mode, nearly all settings in Controller Mode will become invalid, and Brown & Yellow wires will be redefined as below:
- Brown wire: Green LED light control
- Yellow wire: Buzzer control

> If you need to connect Brown/Yellow wires:
When the input voltage for LED is low, the LED will turn into Green; and when the input voltage for Buzzer is low, it will sound.

Set Wiegand Output Format

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

Programming Step	Keystroke Combination
1. Enter Program Mode	*** (Master Code) #**
2. Set Wiegand output bits Or Disable Wiegand output	**8 (26~37) #** *(factory default: 26bits)* **8 0 #**
3. Exit	*

Set Device ID

Programming Step	Keystroke Combination
1. Enter Program Mode	*** (Master Code) #**
2.Disable Device ID **OR** 2.Enable Device ID	**8 1 (00) #** *(factory default)* **8 1 (01~99) #**
3. Exit	*

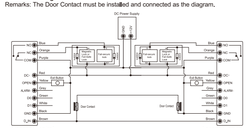
ADVANCED APPLICATION

Interlock

The device supports the Interlock function. It is of two devices for two doors, and mainly used for banks, prisons, and other places where a higher level security is required

Connection Diagram

Remarks: The Door Contact must be installed and connected as the diagram.



Let's name the two devices as "A "and "B" for two doors "1" and "2"
Step 1:
Enroll the users to the two devices (refer to Page 06)
Step 2:
Set both of the two readers (A and B) to Interlock function

Programming Step	Keystro ke Combination
1. Enter Program Mode	*** (Master Code) #**
2. Interlock –OFF **OR** 2. Interlock–ON	**7 0 #** *(factory default)* **7 1 #**
3. Exit	*

The interlock operation is finished.
When and only door 2 is closed, the user can Input the valid Card or input valid fingerprint on Reader A, door 1 will open; then when and only door 1 closed, Input valid Card or input valid fingerprint on Reader B, door 2 will open.

Set Anti-tamper Alarm

The anti-tamper alarm will engage if anyone open the Back Cover of the device.

Programming Step	Keystroke Combination
1. Enter Program Mode	*** (Master Code) #**
2. Anti-tamper Alarm OFF **OR** 2. Anti-tamper Alarm ON	**7 2 #** **7 3 #** *(factory default)*
3 Exit	*

Note:

CamScanner