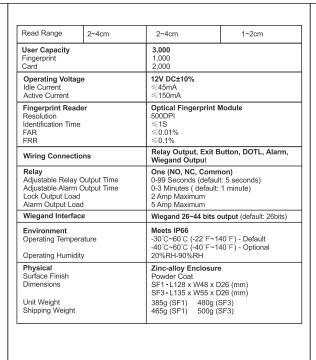
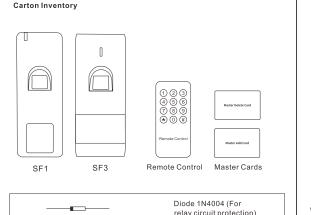


INTRODUCTION -SF1/SF3 is a waterproof metal case standalone fingerprint access control with integrated rd reader. The card reader is of 3 versions optional: 125KHz EM or 125KHz HID & EM IP66 waterproof makes it very suitable for outdoor use; with the slim design, it is an ideal oice to install on door frame. 1/SF3 supports up to 1000 fingerprint users and 2000 card users, with Wiegand 6~44bits output, it can also work as a slave reader to connect to a 3rd party controller. supports fingerprint access, card access and multi users access; with external alarm, door contact, exit button. SF3 supports uploading/downloading user data by APP(refer to SF3 APP manual) Main Features: Waterproof, conforms to IP66 Metal case, anti-vandal One programming relay output 1000 fingerprint users, 2000 card users Wiegand 26~44 bits output Standalone or Pass-through operation Multi cards / fingerprints access Support setting Authorizing Users 2 devices support interlock for 2 doors Latch Mode to hold door or gate open Anti-tamper alarm · Multi-color LED status display Integrated alarm & buzzer output

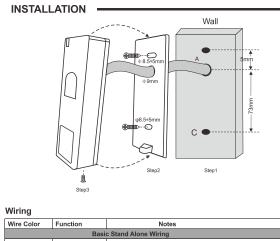


-02-



Wall Anchors

Screw Driver



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)

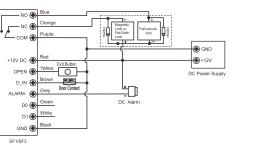
- 04 -



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 bee
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

Connection Diagram

Common Power Supply



Attention: Install a 1N4004 or equivalent diode is needed when use a common

- 05 -

SF1/SF3 - Simplified Instruction Function Description * -123456 - # then you can do the programming 0 - New code - # - Repeat the New Code - # hange the Master Code (code: 6 digits) 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 can be any number from 1~3000. I - Fingerprint - Repeat Fingerprint - # Recording of User ID is critical. Modifications to the user require the User ID or card 1 - Read Card - # Add Card User 2 - Fingerprint - # 2 - User ID - # can delete users continuously Exit from the Programming Mode

Read Card

How to release the door

Set Master Code Programming Step 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)

Reboot Device Brogramming Stan

3. Exit Program Mode

r rogramming otep	Reystroke Combination
Enter Program Mode	* (Master Code) #
2. Reboot Device	0 (000000) #
3. Exit	*

Add Fingerprint Users by Auto ID Allows Master to assign Fingerprint to next available User ID, ID number is 1~1000)

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

Add Fingerprint Users by Specific ID (Allows Master to define a specific ID to the fingerprint, ID number is 1~1000)

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

- 07 -		

Add Card Hears by Auto ID

(Allows Master to assign Card to next available User ID, ID number is 1001~3000)	
Programming Step	Keystroke Combination
Enter Program Mode	* (Master Code) #
2. Add Card : by Reading Card	1 (Read Card)
OR	Cards can be added continuously
2. Add Card: by Card Number	1 (Input 8/10 Digits Card Number) #
3. Exit	*

(Allows Master to define a specific ID to the Card, ID number is 1001~3000)	
Programming Step	Keystroke Combination
Enter Program Mode	* (Master Code) #
2. Add Card : by Reading Card	1 (User ID) # (Read Card)
OR	Cards can be added continuously
2. Add Card : by Card Number	1(User ID) # (Input 8/10 Digits Card
OR	Number) #
2. Add Card: by Block Enrolment	9 (User ID) # (Card Quantity) # (Input 8/1
	Digits Card Number of the First Card) #
0 F.34	

In standby mode, read the Authorized Card or input the Authorized Fingerprint once, the red LED of SF1/SF3 blinks 4 times, then all the valid users are unable to open the door; and the buzzer sounds 3 short beeps (the exit button inside can still open the door); read the Authorized Card or input the Authorized Fingerprint again, the Green LED of SF1/SF3 blinks 4 times, then SF1/SF3 returns to normal use.

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

(Allows Master to assign Card to next available User ID, ID number is 1001~3000)	
Programming Step	Keystroke Combination
Enter Program Mode	* (Master Code) #
2. Add Card: by Reading Card	1 (Read Card)
OR	Cards can be added continuously
2. Add Card: by Card Number	1 (Input 8/10 Digits Card Number) #
3. Exit	*

(Allows Master to define a specific ID to	o the Card, ID number is 1001~3000)
Programming Step	Keystroke Combination
Enter Program Mode	* (Master Code) #
2. Add Card : by Reading Card	1 (User ID) # (Read Card)
OR	Cards can be added continuously
2. Add Card : by Card Number	1(User ID) # (Input 8/10 Digits Card
OR	Number) #
2. Add Card: by Block Enrolment	9 (User ID) # (Card Quantity) # (Input 8/10
	Digits Card Number of the First Card) #

How Authorized Cards / Fingerprints Work?

Programming Step	Keystroke Combination	
Enter Program Mode	* (Master Code) #	
Delete Fingerprint: by Fingerprint R	2 (Input Fingerprint) Fingerprints can be deleted continuously	
Delete Card: by Reading Card R	2 (Read Card) Cards can be deleted continuously	
Delete Card: by Card Number R	2 (Input 8/10 Digits Card Number) #	

- 08 -

 SF1-EM / SF3-EM
 SF1-H&E / SF3-H&E
 SF1-MF / SF3-MF

 125KHz
 125KHz
 13.56MHz

EM tag / card HID & EM Mifare tag / card (ISO14443 Type A)

(Allows Master to assign Card to next available User ID, ID number is 1001~3000)		
Programming Step	Keystroke Combination	
Enter Program Mode	* (Master Code) #	
2. Add Card: by Reading Card	1 (Read Card)	
OR	Cards can be added continuously	
2. Add Card: by Card Number	1 (Input 8/10 Digits Card Number) #	
3. Exit	*	

-01-

Card Users by Specific ID vs Master to define a specific ID to the Card, ID number is 1001~3000)		
ogramming Step	Keystroke Combination	
nter Program Mode	* (Master Code) #	
dd Card : by Reading Card	1(User ID) # (Read Card)	
	Cards can be added continuously	
dd Card : by Card Number	1(User ID) # (Input 8/10 Digits Card	
	Number) #	

ation		
		3. E
) deleted continuously		Set
d continuously Card Number) #		For I finge auto

Master Cards Usage

Using Master Cards to add and delete users

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

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

Programming Step	Keystroke Combination
Enter Program Mode	* (Master Code) #
2. Pulse Mode	3 (1-99) # (Factory default)
OR	The relay time is 1-99 seconds
	(1 is 500Sm) (Factory default: 5 second
2. Latch Mode	30#
	Sets the relay to ON/OFF latch mode
3. Exit	*

Set Access mode For Multi Cards/ Fingerprints access mode, the interval time of reading cards/inputting fingerprints can not exceed 10 seconds, or else, the SF1/SF3 will exit to standby automatically; in each access, the same card or fingerprint can not be used repeatedly, or else, the SF1/SF3 will exit to stand by automatically.

* (Master Code) # 2. Card Access ONLY 2. Fingerprint Access ONLY 4 2 # (Factory default) 2. Card or Fingerprint Access

4 3 (2~9) #

5 (1~3) # (Factory default: 1 minute)

- 03 -

* (Master Code) # 1. Enter Program Mode

2. Multi Cards / Fingerprints Access

Enable Alarm

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

Programming Step	Keystroke Combination
1. Enter Program Mode	* (Master Code) #
2. Strike-out OFF	5 4 # (factory default)
OR	
2. Strike -out ON	5 5 # Access will be denied for 10 minutes
OR	
2. Strike -out ON	5 6 # Enable alarm, need enter Valid Card
	or Fingerprint to silence
3. Exit	*
40	
- 10	J –

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
Enter Program Mode	* (Master Code) #
2. Disable Door Open Detection	6 0 # (factory default)
OR	
2. Enable Door Open Detection	61#
3. Exit	*

Programming Step	Keystroke Combination
. Enter Program Mode	* (Master Code) #
2. Disable Tamper Alarm	6 4 #
DR .	
2. Enable Tamper Alarm	6 5 # (factory default)
3. Exit	*

	Set Audible Response	
	Programming Step	Keystroke Combination
es	Enter Program Mode	* (Master Code) #
	2. Sounds OFF	66#
rd	OR	
	2. Sounds ON	6 7 # (factory default)
	3. Exit	*

> Open the door: Read valid user card or input valid fingerprint fingerprints within 10 seconds. > Remove Alarm: Read valid user card or input valid fingerprint, or read master cards, master fingerprints or input Master Code #

Keystroke Combination
* (Master Code) #
6 0 # (factory default)
61#
*

Set Tamper Alarm

Programming Step	Keystroke Combination
Enter Program Mode	* (Master Code) #
2. Sounds OFF	66#
OR	
2. Sounds ON	6 7 # (factory default)
3. Exit	*

- 11 -

Users Operation & Reset to Factory Default

> Open the door in Multi cards / Fingerprints Mode: Read valid multi cards or

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, then read any two 125KHz EM cards / HID cards / 13.56MHz Mifare cards or two fingerprints within 10 seconds, the LED will turn into red, means reset to factory default successfully. Of the two cards / fingerprints reading, the 1st one is Master Add Card/Fingerprint, the 2nd one is the Master Delete Card/Fingerprint.

> If no Master Cards / Fingerprints added, must press the Exit Button for at least 10

> Reset to factory default, the user's information is still retained.

Set Device ID (Only apply for Fingerprint Users)

Programming Step	Keystroke Comb ination
Enter Program Mode	* (Master Code) #
2. Set Device ID	7 (0~255) # (factory default: 0)
3. Exit	*

valid ingerprint, it will output a virtual card number as the way of Wiegand 26 output. Fe example, if set the Device ID as 255, and the Fingerprint User ID is 3, then it will output the virtual card number as 255,00003 (Only apply for Wiegand 26 bits input controller, or PASS-THROUGH OPERATION —

- 12 -

SF1/SF3 can work as a Wiegand output reader to the controller. Below the operations for adding fingerprint users: 1) Add fingerprint on SF1/SF3 (refer to Page 07)

2) Operate the controller to enter into adding card users, then read this added fingerprint on SF1/SF3, 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

Access Control Power Supply

+12V DC (Red OPEN Yellow O
D_IN
Brown
Door Contact

ALARM- Grey Di.

Oregon

Do Green

White

PROGRAMMING -

proximity tag / card

HID & EM proximity tag / card

GENERAL PROGRAMMING INFORMATION

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

Remark: User ID 999 and 1000 are for Authorized Fingerprints.

> Card Type: EM version: Any 125KHz industry standard 26bits EM

HID & EM version: Any 125KHz industry standard 26bits

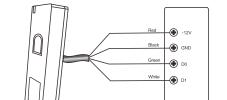
Remark: For Mifare version, tag's reading range is 1~2cm, for card, please place the 4 corners of the card on the card reading area. (see the picture on the right)

Mifare version: 13.56MHz Mifare tag / card (ISO14443 Type A)

User ID 2999 and 3000 are for Authorized Cards.

IMPORTANT: User IDs do not have to be proceeded with any leading zeros.

● PUSH



Set Wiegand Output Format

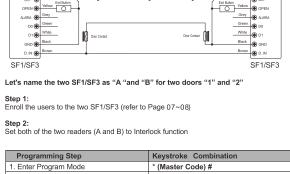
f the Controller.	at of Reader according to the Wiegand input for
Programming Step	Keystroke Combination
Enter Program Mode	* (Master Code) #
2. Set Wiegand output bits	8 (26~44) # (factory default: 26bits)
OR	
Disable Wiegand output	80#

ADVANCED APPLICATION -

The SF1/SF3 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

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

- 13 -



. Interlock - OFF 6 2 # (factory default) . Interlock -ON

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

- 14 -