F007EM-II

Fingerprint & RFID Access Control

User Manual

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1. Packing List

Descriptions	Qty	Remark
Fingerprint Device-F007EM-II	1	
User Manual	1	
Infrared Remote Control Keypad	1	
Manager Card	2	Manager Add Card & Manager Delete Card
Security Screws	1	
Screw Driver	1	
Self Tapping Screws	4	Φ 4mm×25mm
Pastern Stopper	4	Φ 4mm×25mm
Diode	1	IN4004

2. Description

F007EM-II is the performance have greatly improved.

The product uses the precise electron circuit and good productive technology, which is the metal structure fingerprint & card access machine. It is widely used in business affairs organization, office, factory, housing district etc.

This product's programming is done by the infrared remote control keypad or manager fingerprint, support fingerprint or EM 125 KHz card, easy to install and programming.

3. Features

> Strong zinc alloy electroplated anti-vandal case
> Infrared remote control & master cards for programming
> 3000 users, includes 1000 fingerprint users and 2000 card users
> Card interface: EM 125KHz card
> Wiegand 26 input & output.
> Standalone or Wiegand reader mode
> Adjustable door output time, alarm time, door open time
> Anti-magnetic& lock output current short protect
> 2pcs F007EM-II can be interconnected; 2pcs F007EM-II can be intertocked
> Red, yellow and green LED display the working status

4. Installation

> Remove the back cover from the device using the supplied security screw driver
> Drill 4 holes on the wall for the screws and 1 hole for the cable
> Fix the back cover firmly on the wall with 4 flat head screws
> Thread the cable through the cable hole
> Attach the device to the back cover

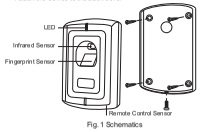


Fig. 1 Schematics

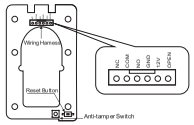


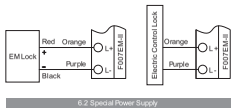
Fig. 2 Circuit board

5. Wiring

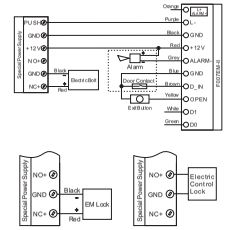
Color	Function	Description
Orange	L+/Alarm+	Lock Positive/Alarm Positive
Purple	L-	Lock Negative
Blue	GND	Request to Exit Button & Door Contact
Black	GND	(-) Negative Regulated Power Input
Red	+12V	(+) 12V DC Positive Regulated Power Input
Brown	D-IN	Door Contact
Yellow	OPEN	Request to Exit Button
Grey	Alarm-	Alarm Negative
Green	D0	Wiegand Output D0
White	D1	Wiegand Output D1

6. Connection Diagram

6.1 Common Power Supply



6.2 Special Power Supply



7. Manager Operation

There are 3 ways to add and delete users : 1. by Manager Card ; 2. by remote Control. 3. by Manager Fingerprint

7.1 By Manager Card (the most convenient way)

Add Fingerprint User

Manager add card | Enter 1st User Fingerprint Twice | 2nd User Fingerprint Twice ··· | Manager add card |

Note: When add fingerprint, please input each fingerprint twice, during which the LED shines red then turn green, means the Fingerprint is enrolled successfully. When delete fingerprint, just input it once

Add Card user

Manager add card | 1st User card | 2nd User card ··· | Manager add card |

Remarks: Fingerprint user ID is 3-1000, Card user ID is 1001-3000, when add fingerprint or card by Manager Card, it is produced automatically from 3-1000 or 1001-3000. (ID 1, 2 are belong to Manager Fingerprint)

Delete users

Manager delete card | user card OR Fingerprint once| ··· | Manager delete card |

To delete more than 1 card or fingerprint, just input card or fingerprint continuously.
Note: When delete fingerprint, please input it once.

7.2 By Remote Control

Enter into Programming Mode

* | Master code | # | Default Master code: 888888

Remarks: All the steps below must be done after enter into programming mode.

Add Users

a) ID number - Auto generation

To add fingerprint users: 1 | input one fingerprint twice | # |
(To add more than one fingerprints, just input finger continuously)

To add card users : 1 | Card | # Or 1 | Card Number (8 digits) | # |
(To add more than one card, just input cards or card number continuously)
Note: when add card users, it can just enroll the card number and don't have to enroll the card itself. The card number is the 8 digit printing on the card.
In the same way, when delete card users, it can just enroll the card number to delete it and don't have to get the card if it is lost.

b) ID number - Appointment

To add fingerprint users 1 | ID number | # |user fingerprint | # |
(Fingerprint user ID number can be any digit between 3 - 1000, but one ID number to one user)
To add fingerprint users continuously:
1 | 3 | # | 1st user fingerprint | 4 | # | 2nd user fingerprint | .... | N | # | Nth user fingerprint | # |

To add card users : 1 | ID number | # | card | # | Or 1 | ID number | # | the card number (8 digit) | # |
(Card User ID number can be any digit between 1001-3000, but one ID to one Card)

To add card continuously : 1 | 1001 | # | 1st card 1002 | # | 2nd card | .. N | # | Nth card | # | Or 1 | 1001 | # | 1st card number 1002 | # | 2nd card number | .... N | # | Nth card number | # |

Delete Users

Delete fingerprint users: 2 | fingerprint once | #
Delete card users 2 | card | # | Or 2 | card number | #
To delete users continuously: just input fingerprint or card continuously

If Delete Users by ID

2 | user ID | # |
Remarks: When delete users, the Master can just delete its ID number and don't have to input fingerprint or card. It is the good option to delete if the users were left or cards lost.

to Save and Exit from the programming mode

* |

7.3 By Manager Fingerprint

Enter into Programming Mode

* | Master Code | #

Add Manager Fingerprint

1 | 1 | # | input fingerprint twice | 2 | # | input another fingerprint twice | *
ID number 1: Manager add fingerprint
ID number 2: Manager delete fingerprint
The 1st fingerprint: Manager add fingerprint, it is to add the users
The 2nd fingerprint: Manager delete fingerprint, it is to delete users

To Add User

Fingerprint | Manager add fingerprint | Input user fingerprint twice | Repeat Manager add fingerprint |
Card | Manager add fingerprint | card | Repeat Manager add fingerprint |

To add users continuously

Fingerprint | manager add fingerprint | 1st user fingerprint | 2nd user fingerprint | .. | N2nd User Fingerprint | Manager add fingerprint |
Card | Manager add fingerprint | card 1 | card 2 | ..... | Repeat Manager add fingerprint |

To Delete User

To delete Fingerprint users
Manager delete fingerprint | 1st user fingerprint | 2nd user fingerprint | ... N1st user fingerprint | Manager delete fingerprint |

To delete card users :
Manager delete fingerprint | Card 1 | Card 2 | ..... Card N | Manager delete fingerprint |

7.4 Delete All the Users

Delete All the Users

* | Master Code | # | 20000 | #
Note: This will delete all fingerprints, cards, including Manager Fingerprint but except Manager Card, before this operation it is suggested to make sure the data is un-useful.

7.5 Setting -Facility Code

Setting - Facility Code

3 | 0~255 | #
This operation might be required when F007EM-II is acting as Wiegand reader and connecting to multi-door controller.

7.6 Setting -Lock style and door relay time

Setting - Lock style and door relay time

Fail secure (unlock when power on):
* | Master Code | # | 4 | 0~99 | #
Fail safe (unlock when power off):
* | Master Code | # | 5 | 0~99 | #
Remarks: In programming mode, press 4 is to choose Fail secure lock, 0-99 is to set door relay time 0-99 seconds; press 5 is to choose Fail safe lock, 0-99 is to set door relay time 0-99 seconds. (Factory default setting is Fail safe lock, relay time 5 seconds.)

7.7 Setting - Door open detection

Setting - Door open detection

* | Master Code | #
6 | 0 | # to disable this function (factory default setting)
6 | 1 | # to enable this function
When enable this function:
a) If open the door normally, but not closed after 1 minute, the inside Buzzer will alarm automatically, the alarm will be off itself after 1 minute
b) If the door was opened force, or the door was not opened in 120 seconds after lock was released, the inside Buzzer and outside Siren will both alarm.

7.8 Setting - Security Status

Setting - Security Status

* | Master Code | #
Normal status : 7 | 0 | # (Factory default setting)
Lock on status : 7 | 1 | # In 10 minutes, if there's 10 times invalid card or wrong Password, the device will lock on for 10 minutes.
Alarm status : 7 | 2 | #, In 10 minutes, if there's 10 times invalid card or wrong Password, the device will alarm.

7.9 Setting - Two devices interlocked

Setting - Two devices interlocked

* | Master Code | #
8 | 0 | # to disable this function (factory default setting)
8 | 1 | # to enable this function

7.10 Setting - Alarm signal output time

Setting - Alarm signal output time

* | Master Code | # | 9 | 0~3 | #
Alarm time is 0-3 minutes for option, factory default is 1 minute.

8. User Operation

8.1 User to release the door

User to release the door

Card user | Read card |
Fingerprint user: Input fingerprint

8.2 Remove Alarm

Remove Alarm

When the device is in alarm (From built-in buzzer, alarm equipment outside), to remove it : Read valid user's card or fingerprint or | Manager Fingerprints or cards | or | Master Code | # |
(Any of the method above can remove the alarm)

9. Advanced Application

9.1 F007EM-II works as slave reader, connecting to Controller

F007EM-II supports Wiegand output, it can be connected to the controller which support Wiegand 26 input as its slave reader, the connection diagram is as Figure 1.

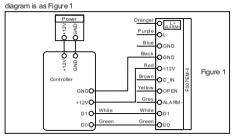


Figure 1

If the controller is PC connection, the users ID can be shown in the software.
a) Card user, its ID is the same as the card number;
b) Fingerprint user, its ID is the combination of device ID and fingerprint ID
The device ID is set as below: * | Master Code | # | 3 | device ID | #
Note: Device ID can be any digit of 0-255
For example: device ID was set 255, fingerprint ID is 3, then its ID to the controller is 255 0003.

9.2 F007EM-II works as Controller, connecting slave reader

F007EM-II supports Wiegand input, any card reader which supports Wiegand 26 interface can connect to it as its slave reader, no matter it is ID card or IC card. The connection is showed as Figure 2. When add cards, it is required to do it at the slave reader, but not controller (except EM card reader, which can be added on either reader or controller)

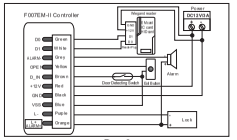


Figure 2

9.3 Two F007EM-II Interconnected-Single Door

Wiegand output. Wiegand input: The connection is showed as Figure 3. One F007EM-II installed inside the door, the other outside the door, two devices interconnect. Either device acts as the controller and reader at the same time. It has below feature:

9.3.1 Users can be enrolled on either of the device. The information of the two devices can be communicated. In this situation the user capacity for one door can be up to 6000. Each user can use fingerprint or Code for access.
9.3.2 The setting of the two F007EM-II must be the same. If the master Code was set different, the user enrolled in the outdoor unit can't access from outside.

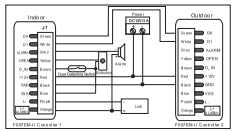


Figure 3

9.4 Two device interconnected & interlocked-two doors

The connection is showed as Figure 4, for the two doors, each door install one controller and one lock related. The interlocked function will go when either door is opened, the other door is locked forced, only close this door, the other door can be opened.
The interlocked function is mainly using in bank, prison, and other places where require higher security. Two doors are installed for one access.
The user enters fingerprint or card on controller 1, the door 1 will open, the user enters, and close door 1, only after that, the user can open the second door by entering fingerprint or card on second controller.

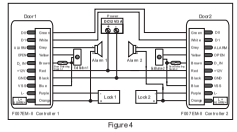


Figure 4

10. Reset to Factory Default

Power off, press the RESET key (SW14) on the PCB, hold it and power on, release it until hear two short beeps, the LED shines in orange, then read any two EM cards, the LED will turn in red, means reset to factory default setting successfully. Of the two EM cards read, the first one is Manager Add Card, the second one is Manager Delete Card.

Remarks: Reset to factory default setting, the users' information enrolled is still retained. When reset to Factory setting, the two Manager cards must be re-enrolled.

11. Sound and Light Indication

Operation Status	LED	Finger Sensor	Buzzer
Reset to factory default setting	Orange	--	2 Short Rings
Sleeping mode	Red Shines Slow	--	--
Standby	Red Shines Slow	Shine	--
Enter into programming mode	Red Shine	--	Long Ring
Exit from programming mode	Red Shines Slow	--	Long Ring
Wrong operation	--	--	3 Short Rings
Open the door	Green Shines	--	Long Ring
Alarm	Red Shines Fast	--	Alarm

12. Technical Specification

Input Voltage	DC 12Vs10%
Idle Current	<=20mA
Active Current	<=80mA
User Capacity	Fingerprint: 1000 Card: 2000
Card Type	EM 125 KHz card
Card Reading Distance	3~6 cm
Operating Temperature	-10℃~50℃
Operating Humidity	20%RH-95%RH
Resolution	450 DPI
Fingerprint Input Time	<1S
Identification Time	<1S
FAR	<0. 0002256%
FRR	<0. 0198%
Dimensions	115mm×70mm×35mm
N.W	500g
G.W	800g