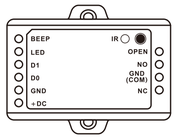
Mini Controller Board



User Manual

INTRODUCTION

The controller is a mini single door controller panel, can work with any Wiegand 26~44, 56, 58bits output reader, it uses Atmel microcontroller to assure stable performance, and equips with an infrared remote control for easy operation. The device supports 1,000 users, all user data can be transferred.

FEATURES

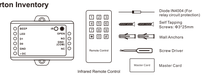
> 12V DC power input
> One relay,1000 users
> Multi access modes: Card, Card or PIN, and multi Cards/PINs
> Wiegand 26~44, 56, 58bits input
> Can connect with any reader with Wiegand 26~44, 56, 58bits output
> Can connect with any keypad reader with 4bits, 8bits (ASCII), or 10bits Virtual number output
> User data can be transferred (except fingerprint users)
> 2 devices can be interlocked for 2 doors
> Support Master Card and Authorized User

Specifications

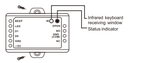
User Capacity Common User Visitor User Authorized User	**1000** 989 10 1
Operating Voltage Idle Current Active Current	**12V DC** ≤ 100mA ≤ 150mA
Wiring Connections	**Relay output, exit button, Wiegand input**
Relay Adjustable Relay Output Time Lock Output Load	**One (NO, NC, Common)** 0~99 Seconds (5 seconds default) 2 Amp Maximum
Wiegand Interface Input	**Wiegand 26~44, 56, 58bits**
Environment Operating Humidity	**Indoor** 0~90%RH

Physical Colour Dimensions Unit Weight Shipping Weight	**ABS Shell** Black 6.5L x 5.4W x 1.9H (cm) 40g 100g

Carton Inventory



INSTALLATION



Wiring

Name	Notes
The Left Side	
BEEP	Buzzer Control
LED	Green LED Light Control
D1	Wiegand Input Data 1
D0	Wiegand Input Data 0
GND	Negative Pole of DC (12V DC) Power Input
+DC	Positive Pole of DC (12V DC) Power Input

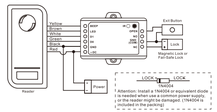
The Right Side	
OPEN	Connect to One Wire of Exit Button
NO	Normally Open Relay Output (install diode provided)
GND (COM)	Negative Pole of Lock (Common Connection for Relay Output)
NC	Normally Closed Relay Output (Install diode provided)

Sound and Light Indication

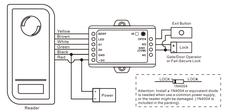
Operation Status	LED	Buzzer
Stand by	Red light bright	-
Enter into programming mode	Red light shines	One beep
In the programming mode	Oragne light bright	One beep
Operation error	---	Three beeps
Exit from the Programming mode	Red light bright	One beep
Open lock	Green light bright	One beep
Alarm	Red light shines quickly	Beeps

Connection Diagram

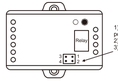
Magnetic Lock or Fail-safe Lock



Door/Gate Operator or Fail-secure Lock



When Use NO/NC/COM Dry Contact Output



1) Remove the Pin Caps on points 1, 2 and points 3,4
2) Insert one of the Pin Caps on points 1,3
3) Fix the back cover, and keep the other Pin Cap well

Remark:
The power supply's voltage must be the same with lock's supply voltage, or else, the lock will not work properly or be damaged.

PROGRAMMING

Programming will be vary depending on access configuration. Follow the instructions according to your access configuration.

Notes:

- **Remote Control:** Please use the Infrared Remote Control to program the Controller, "IR" on the Controller is the infrared receiving window, please direct the Remote Control to it.

Cards can be read on the RFID/Keypad/Fingerprint readers only.
PINs can be input/added on either the remote control or the external Keypad Reader, except when the Keypad Reader is 10 digits virtual card number output, the PIN(s) can only be input/added through the Keypad Reader.

- **User ID number:** Assign a user ID to the user in order to track it.
  The Common user ID: 0~988
  Authorized User ID: 989
  Visitor User ID: 990~999

IMPORTANT: User IDs do not have to be processed with any leading zeros.
Recording of User ID is critical.
PIN: Can be any 4~6 digits

Enter and Exit Program Mode

Programming Step	Keystroke Combination
1. Enter Program Mode	*** (Master Code) #** (factory default is 123456)
2. 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	*

Add Common Users

PIN/Card user ID: 0~988; PIN length: 4~6 digits

Programming Step	Keystroke Combination
1. Enter Program Mode	*** (Master Code) #**
Add Card User	
2.Using Auto ID (Allows the device to assign Card to next available User ID number) **OR** 2.Select Specific ID (Allows the device to define a specific User ID to associate the card to) **OR** 2.Add Card: Block Enrollment (Allows Master to add up to 988 cards to the Reader in a signle step) Takes 2 minutes to program	**1 (Read Card)/ (Input 8/10 Digits Card Number) #** The cards can be added continuously. **1 (User ID) # (Read Card) / (Input 8/10 Digits Card Number) #** **1 (User ID) # (Card Quantity) # (The first Card 8/10 Digits Number) #** Card's number must be consecutive; Card quantity = numbers of cards to be enrolled
Add PIN User	
2.Using Auto ID (Allows the device to assign PIN to next available User ID number) **OR** 2.Select Specific ID (Allows the device to define a specific User ID to associate the PIN to)	**1 (PIN) #** **1 (User ID) # (PIN) #**

Tips for PIN Security (Only valid for 6 digits PIN):
For higher security we allow you to hide your correct PIN with other numbers up to a max of 9 digits.

Example PIN 123434
You could use *123434(*" or "*(123434)
(*" can be any numbers from 0~9)

The device Connected with Fingerprint Reader:
For example:
Connect SF1 as the fingerprint reader to the device, two steps to enroll the valid fingerprint,
(1) Add the Fingerprint (A) on SF1
(2) Add the same Fingerprint (A) on the device as below:

1	Enter Program Mode: *** (Master Code) #**
2 OR 2	**1 (Press Fingerprint A on SF1) (Repeat Fingerprint A on SF1) #** (ID auto allocated) **1 (User ID) # (Press Fingerprint A on SF1) (Repeat Fingerprint A on SF1) #** (Select Specific ID)
3	*

Add Authorized User

(User ID number is 989; PIN length: 4~6 digits)

Programming Step	Keystroke Combination
1. Enter Program Mode	*** (Master Code) #**
2.Add Card **OR** 2.Add PIN	**1 (User ID) # (Read Card / Input 8/10 Digits Card number) #** **1 (User ID) # (PIN) #**
3. Enter Program Mode	*

Remark:
Authorized user can be card or PIN, read the Authorized Card or input Authorized PIN, then all valid users can't access; Read the Authorized Card or input Authorized PIN again, then all valid userd can access again.

Add Visitor Users

(User ID number is 990~999; PIN length: 4~6 digits)
There are 10 groups Visitor PIN/card available, the users can be specified up to 10 times of usage, after a certain number of times,i.e. 5 times, the PIN/card become invalid automatically.

Programming Step	Keystroke Combination
1. Enter Program Mode	*** (Master Code) #**
2.Add Card **OR** 2.Add PIN	**1 (User ID) # (0~9) #(Read Card / Input 8/10 Digits Card number) #** **1 (User ID) # (0~9) # (PIN) #** (0~9 means times of usage, 0=10 times)
3. Enter Program Mode	*

Delete Users

Programming Step	Keystroke Combination
1. Enter Program Mode	*** (Master Code) #**
2.Delete User - By card/PIN **OR** 2.Delete User - By ID number **OR** 2.Delete User - By Card number **OR** 2.Delete ALL Users	**2 (Read Card) / (Input PIN) #** **2 (User ID) #** **2 (Input 8/10 Digits Card number) #** **2 (Master Code) #**
3. Enter Program Mode	*

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

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.Card Access **OR** 2.PIN Access **OR** 2.Card or PIN Access **OR** 2.Multi User Access	**4 0 #** **4 1 #** **4 3 #** (factory default) **4 3 (2~9) #** (Only after 2~9 valid users, the door can be opened)
3. Enter Program Mode	*

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 card/PIN or Master code/card.

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) **Set Alarm Time**	**6 0 #** (factory default) **6 1 #** **6 2 #** **5 (0~3) #** (factory default is 1 minute) Enter Master Code # or Master Card or valid User card/PIN to silence)
3. Enter Program Mode	*

Set Audible and Visual Response

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

Set Wiegand Format

Programming Step	Keystroke Combination
1. Enter Program Mode	*** (Master Code) #**
2.Wiegand Format Auto-identification **OR** 2.Specified Wiegand Format	**8 0 # (factory default)** **8 (26~44, 56, 58) #**
3. Enter Program Mode	*

Master Card Usage

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

User Operation & Reset to Factory Default

> Open the door: Read valid user card or input valid user PIN
> Remove Alarm: Input Master Code # or read Master Card or valid user card / PIN or valid user card / PIN

> To reset to factory default & Add Master Cards: power off, press the Exit Button (or connect "OPEN" and "GND" to be short circuit), hold it and power on, there will be two beeps, then release the exit button (or disconnect "OPEN" and "GND"),the LED light turns into yellow, then read any 125KHz EM card or HID cards or 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:

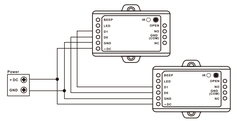
① The type of the Master Card is according to the external reader. For example: the external reader is 125KHz HID reader, then the Master Card must be 125KHz HID card.
② If no Master Card added, must press the Exit Button for at least 5 seconds before release. (This will make the previous registered Master Card invalid)
③ Reset to factory default, the user's information is still retained.

Advanced Application

Collection Card Mode
After this mode is turned on, all the cards can open the lock, at the same time, all cards are added in the device.

Programming Step	Keystroke Combination
1. Enter Program Mode	*** (Master Code) #**
2.Collection Card Mode OFF **OR** 2.Collection Card Mode ON	**9 2 #** (factory default) **9 3 #**
3. Enter Program Mode	*

User Information Transfer (Valid for Card/PIN Users)
The enrolled user can be transferred from a "Master"unit to a "Slave" unit.
The Master code must be the same in the "Master" and the "Slave" unit.



Remarks:
> The Master units and Slave units must be same series devices
> The Master Code of the Master unit and the Slave unit must be set to the same.
> If the Slave unit is already with the users enrolled, it will be covered after transferring.
>For full 986 users enrolled, the transfer takes about 30 seconds.

Set Transferring on Master Unit:

Programming Step	Keystroke Combination
1. Enter Program Mode	*** (Master Code) #**
2.Set Transferring	**9 9 #**
Within 30 seconds, Green LED shines, after one beep, the LED will trun into RED, which means the users' information has been transferred successfully.	
3. Enter Program Mode	*

Notes