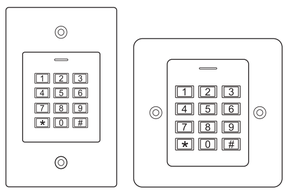
Embedded Keypad Access Control



Rectangle Square

User Manual

INTRODUCTION

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

The device supports 1,000 users (990 common users + 10 visitor users). It supports multi access modes in card access, PIN access, card + PIN access, or multi cards/PINs access.

Optional Version:
The device with Bluetooth-enabled. People can install the Bluetooth APP to easily access the door with their smartphone. (APP operation can refer from APP manual)

Features

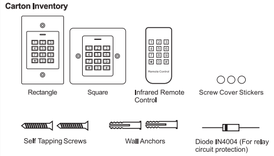
> Waterproof, conform to IP66
> Vandal resistant metal enclosure
> One relay, 1,000 users (990 common + 10 visitor)
> PIN length: 4~6 digits
> Card Type: 125KHz EM Card/13.56MHz Mifare Card (optional)
> Wiegand 26 bits output, Wiegand 26/34bits input automatic identification
> Card block enrollment
> Tri-color LED status display
> Pulse mode, Toggle mode
> Low temperature resistance (-40°C)

Specifications

User Capacity Common User Visitor User	**1000** 990 10
Operating Voltage Working Current Idle Current	**12~18V DC** ≤ 150mA ≤ 60mA
Proximity Card Reader Radio Technology Read Range	EM or Mifare 125KHz / 13.56MHz 2~6 cm
PIN Length	**4~6 digits**
Wiring Connections	**Relay Output, Exit Button, Wiegand Input, Wiegand Output**

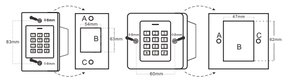
Relay Adjustable Relay Output Time Lock Output Load	**One (NO, NC, Common)** 0~99 Seconds (5 seconds default) 2 Amp Maximum
Wiegand Interface	**Wiegand 26 bits output** **Wiegand 26/34bits input automatic identification**
Environment Operating Temperature Operating Humidity	**Outdoor (Meets IP66)** -40°C ~ 60°C (-40°F ~ 140°F) 0%RH~98%RH
Physical Color Dimensions Unit Weight Shipping Weight	**Stainless Steel Plate** Silver & Black 115x70x25mm(Rectangle) 86x86x25mm(Square) 245g 285g

Carton Inventory



INSTALLATION

- Drill 2 holes(A,C) on the wall for the screws and one hole for the device
- Knock the supplied rubber bungs to the screw holes(A,C)
- Thread the cable through the hole(B)
- Attach the unit to the hole(B)
- Fix the unit firmly on the wall with 2 flat head screws
- Cover the screws by Screw Cover Stickers



Wiring

Colour	Function	Notes
Red	Power +	12-18Votes DC Regulated Power Input
Black	GND	Ground
Blue	NO	Normally Open Relay Output
Brown	COM	Common Connection for Relay Output
Grey	NC	Normally Closed Relay Output
Yellow	OPEN	Request to Exit input(REX)
Green	D0	Wiegand Input/Output Data 0
White	D1	Wiegand Input/Output Data 1

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

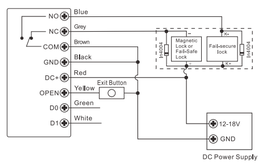
Programming Step	Keystroke Combination
Enter Program Mode	★ **(Master Code) #** (Factory default is 123456)
Exit Program Mode	★

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	★

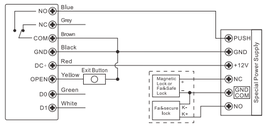
Connection Diagram

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



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

Notes:
> User ID number: Assign a user ID to the access card/ PIN in order to track it.
The Common User ID:
PIN/ Card user ID: 0 ~ 989
Visitor User ID: 990 ~ 999

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 be available.

> Proximity Card:
Proximity Card: 125KHz EM card or 13.56MHz Mifare card

> PIN: Can be any 4~6 digits except 8888 which is reserved.

Add Common Users

PIN/ Card user ID: 0~989; PIN length: 4~6 digits except 8888

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 Master 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 single step) Takes 2 minutes to program.	**1 (Read Card) / (Input 8/10/17 Digits Card Number) #** The cards can be added continuously. **1 (User ID) # (Read Card) / (Input 8/10/17 Digits Card Number) #** **1 (User ID) # (Card Quantity) # (The First Card 8/10/17 Digits Number) #** Cards' number must be consecutive; (Card quantity is the number 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 manager to define a specific User ID to associate the PIN to)	**1 (PIN) #** The PINs can be added continuously **1 (User ID) # (PIN) #**
3. Exit	★

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 10 digits.

Example PIN: 123434
You could use **1(123434) ** or ** (123434)
(*** can be any numbers from 0~9)

Simplified Instruction	
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 PIN User	**1 - PIN - #** (The PIN is any 4~6 digits except 8888 which is reserved)
Delete User	**2 - Read Card - #** **2 - PIN - #**
Exit from the Programming Mode	★
How to release the door	
Card User	Read Card
PIN User	Input PIN #

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Add Visitor Users

(User ID number is 990~999; PIN length: 4~6 digits except 8888)
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 8/10/17 Digits Card Number) #** **1 (User ID) # (0~9) # (PIN) #** (0~9 means times of usage, 0=10 times)
3. Exit	★

Change PIN Users(PIN length: 4~6 digits except 8888)

Programming Step	Keystroke Combination
Note: Below is done outside programming mode, users can undertake this themselves	
Change PIN	★ **(User ID) # (Old PIN) # (New PIN) # (Repeat New PIN) #**
Change PIN of Card + PIN access mode (There will auto allocate PIN (8888) to cards when adding)	★ **(Read Card) (Old PIN) # (New PIN) # (Repeat New PIN) #**

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) #** The users can be deleted continuously. **2 (User ID) #** **2 (Input 8/10/17 Digits Card Number) #** **2 (Master Code) #**
3. Exit	★

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. Exit	★

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

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 #** Access will be denied for 10 minutes (Exit button is still workable) **6 2 #** **5 (0 ~ 3) #** (factory default is 1 minute) Enter Master Code # or Master Card or valid user card/ PIN to silence
3. Exit	★

Set Audible and Visual Response

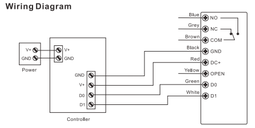
Programming Step	Keystroke Combination
1. Enter Program Mode	★ **(Master Code) #**
2. Disable Sound Enable Sound **OR** 2. LED Always OFF LED Always ON	**7 0 #** **7 1 #** (factory default) **7 2 #** **7 3 #** (factory default)
3. Exit	★

WIEGAND MODE

Pass-through Mode

(The keypad Operates as a Wiegand Output Reader)
In this mode the keypad supports a Wiegand 26bits output so the Wiegand data lines can be connected to any controller which supports a Wiegand 26 bits input, and then the keypad will operate as a slave reader.

Wiring Diagram



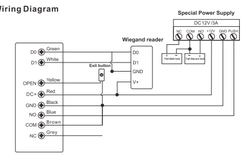
Keypad Transmission Format
Virtual Card Number

The reader will transmit the PIN data when it receives the last key (#) after PIN code
Example: PIN code: 999999
Press 999999 #, then the output format will be:
00999999

Controller Mode

(The keypad Operates as a Controller)
It supports Wiegand 26/34 bits input (Automatic Identification), so an external Wiegand device with 26/34 bits output can be connected to the Wiegand input terminals on the keypad. Either an EM card reader (125 KHz) or an Mifare card reader (13.56MHz) can be connected to the keypad.
Cards are required to be added at the external reader, except where an external EM card Reader is used, in this case cards can be added at either reader or controller.

Wiring Diagram



OTHERS

Users Operation & Reset to Factory Default

> Open the door: Read valid user card or input valid user PIN #

> Remove Alarm: Enter Master Code # or Master Card or valid user 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.

Master Card Usage
(Users can add the Master Card by themselves--- Can refer to page 12 'Reset to factory default & Add Master Card')

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