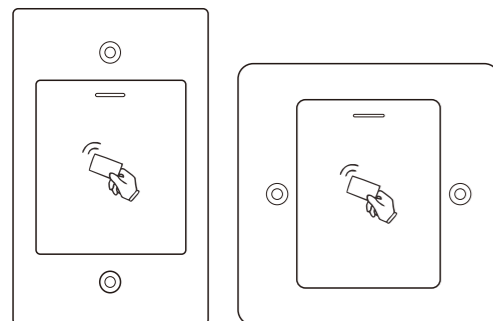


# Embedded RFID Access Control



Rectangle

Square

## User Manual

## INTRODUCTION

The device is a compact, waterproof stand-alone programmable access control system that provides proximity entry for up to 2000 users. It uses Atmel microcontroller assures maximum performance in any environment, and the low-power circuit makes its service life prolonged. The product unique feature is simple design, easy operation, and high reliability.

### Main Features:

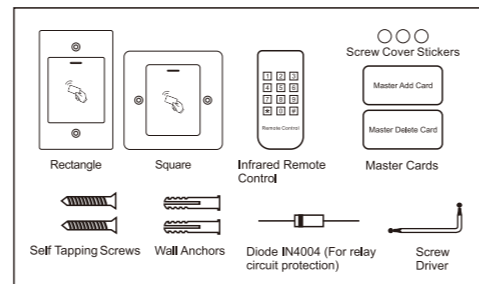
- Metal case, embedded design
- Waterproof, conform to IP66
- Read 125KHz EM card or tag
- One programmable relay operation
- Pulse mode, Latch mode
- Card block enrollment
- Built in light dependent resistor (LDR) for anti tamper
- Buzzer for audible or silent mode
- Wiegand 26 bits output
- Wiegand 26/34 bits input automatic identification

### Specifications:

<b>User Capacity</b>	<b>2000</b>
<b>Operating Voltage</b>	<b>12-24V DC</b>
<b>Idle Current</b>	<b>&lt;50mA</b>
<b>Proximity Card Reader</b>	<b>EM</b>
<b>Radio Technology</b>	<b>125KHz Proximity Card</b>
<b>Read Range</b>	<b>0-6cm</b>
<b>Wiring Connections</b>	<b>Relay Output, Exit Button, Wiegand (in/out)</b>
<b>Relay</b>	<b>One (NO, NC, Common)</b>
<b>Adjustable Relay Output</b>	<b>0-99 Seconds</b>
<b>Time Lock Output Load</b>	<b>2 Amp Maximum</b>
<b>Environment</b>	<b>Meets IP66</b>
<b>Operating Temperature</b>	<b>-40°C ~60°C</b>
<b>Operating Humidity</b>	<b>0%RH~98%RH</b>

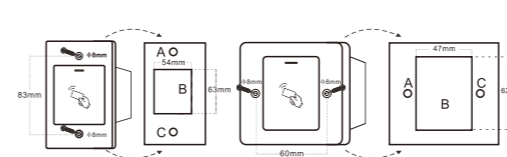
<b>Physical</b>	<b>Stainless Steel Plate</b>
<b>Color</b>	Silver & Black
<b>Dimensions</b>	115x70x25mm(Rectangle) 86x86x25mm(Square)
<b>Unit Weight</b>	230g
<b>Shipping Weight</b>	270g

### 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

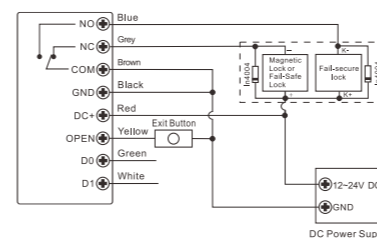


### Wiring

Colour	Function	Notes
Red	Power +	12~24V DC Votes 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

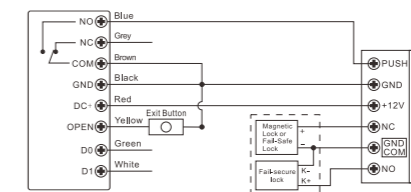
### Connection Diagram

#### 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:



## STANDALONE MODE

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

### General Programming Information

- **Remote Control:** Please use the Infrared Remote Control to program the Reader. The infrared receiver head is near LED, so when program the reader, please direct the Remote Control to the LED.
- **User ID number:** Assign a user ID to the access card in order to track it. The user ID number can be any number from 1~2000. 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:** Any 125KHz industry standard 26 bit EM Proximity card or Tag.

## Simplified Instruction

Function Description	Operation
Enter the Programming Mode	<b>* (Master Code) #</b> (123456 is the factory default master code)
Change the Master Code	<b>0 (New Master Code) #</b> <b>(Repeat New Master Code)#</b> (code: 6 digits)
Add Card User	<b>1 (Read Card)</b> (can add cards continuously)
Delete Card User	<b>2 (Read Card)</b> (can delete cards continuously)
Exit from the programming mode	<b>*</b>
<b>How to be granted access</b>	
Card User	Read card

### Enter and Exit Program mode

Programming Step	Keystroke Combination
Enter Program Mode	<b>* (Master Code) #</b> Factory default is 123456
Exit Program Mode	<b>*</b>

### Set Master Code

Programming Step	Keystroke Combination
1. Enter Program Mode	<b>* (Master Code) #</b>
2. Update Master Code	<b>0 (New Master Code)#</b> <b>(Repeat New Master Code)#</b>
3. Exit Program Mode	<b>*</b>

### Add User Cards

Programming Step	Keystroke Combination
1. Enter Program Mode	<b>* (Master Code) #</b>
2. Add Card: Using Auto ID (Allows manager to define Card to next available User ID number)	<b>1 (Read Card)</b> Repeat Step 2 for additional user cards
<b>OR</b>	
2. Add Card: Select Specific ID (Allows manager to define a specific User ID to associate the card to)	<b>1 (User ID) # (Read Card)</b> The user ID is any number from 1-2000
<b>OR</b>	
2. Add Card: By Card Number	<b>1 (Input 8/10 Digits Card Number) #</b>
<b>OR</b>	
2. Add Card: Block Learn (Allows manager to add up to 2000 cards to the Reader in a single step.) Takes 3 minutes to program.	<b>1 (User ID Number) # (Card Quantity) # (The First Card Number) #</b> Cards' number must be consecutive; Card quantity = number of card to be enrolled.
3. Exit	<b>*</b>

### Delete User Cards

Programming Step	Keystroke Combination
1. Enter Program Mode	<b>* (Master Code) #</b>
2. Delete Card: By read card	<b>2 (Read Card)</b> Repeat Step 2 for additional user cards
<b>OR</b>	
2. Delete Card: By user ID	<b>2 (User ID) #</b> The user ID is any number from 1-2000.
<b>OR</b>	
2. Delete Card: By Card Number	<b>2 (Input 8/10 Digits Card Number) #</b>

### Set Relay Configuration

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

Programming Step	Keystroke Combination
1. Enter Program Mode	<b>* (Master Code) #</b>
2. Pulse Mode	<b>3 (1-99) #</b> The relay time is 1-99 seconds. Default is 5 seconds.
<b>OR</b>	
2. Latch Mode	<b>3 0 #</b> Sets the relay to ON/OFF Latch mode
3. Exit	<b>*</b>

### Set Strike-out Alarm

The strike-out alarm will engage after 10 failed card attempts. Factory is OFF. The strike-out alarm can be set to deny access for 10 minutes after engaging or it can be set disengage only after entering a valid card or Master code

Programming Step	Keystroke Combination
1. Enter Program Mode	<b>* (Master Code) #</b>
2. Strike-Out OFF	<b>4 0 # (factory default)</b>
<b>OR</b>	
2. Strike-Out ON	<b>4 1 #</b> Access will be denied for 10 minutes
<b>OR</b>	
2. Strike-Out ON (Alarm)	<b>4 2 #</b>
Set alarm time	<b>5 (0 ~ 3) #</b> Factory default is 1 minute Enter Master code # or valid user card to silence
3. Exit	<b>*</b>

### Set Audible and Visual Response

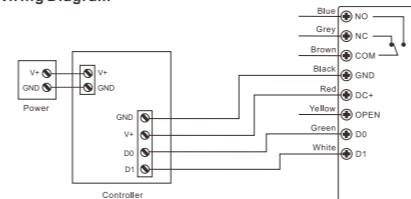
Programming Step	Keystroke Combination
1. Enter Program Mode	<b>* (Master Code) #</b>
2. Control LED	<b>OFF = 6 1 #</b> <b>ON = 6 2 #</b>
<b>OR</b>	
2. Control Sounds	<b>OFF = 6 3 #</b> <b>ON = 6 4 #</b> (Factory defaults are ON)
3. Exit	<b>*</b>

## WIEGAND MODE

### Pass-through Mode

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

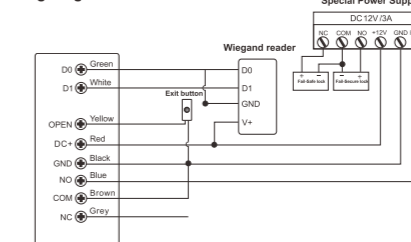
### Wiring Diagram



### Controller Mode

(The device 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 device. Either an EM card reader (125 KHz) or an Mifare card reader (13.56MHz) can be connected to the device.  
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:

Open the door: Read the valid user card, the door will open.  
Remove Alarm: Read valid user card, or Input Master code #

### Reset to Factory Default:

To reset to factory default, power off, press the Exit Button, hold it and power on, there will be two beeps, and the LED light turns into yellow, release the exit button, then read any two 125KHz EM cards, the LED will turn into red, it means reset to factory default successfully. Of the two cards reading, the first one is Master Add Card, the second one is the Master Delete Card.

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

### Erase all Cards

**\*|Master Code|#|2|Master code|#|\***

This will delete ALL User data, but all configuration data is retained

### Master Cards Using

Using Master Cards to add and delete card users	
Add a User Card	<b>1. (Read Master Add Card)</b> <b>2. (Read User Card)</b> Repeat Step 2 for additional user cards <b>3. (Read Master Add Card)</b>
Delete a User Card	<b>1. (Read Master Delete Card)</b> <b>2. (Read User Card)</b> Repeat Step 2 for additional user cards <b>3. (Read Master Delete Card)</b>

### 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	Yellow 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

