



## **MA500 Access Control**

***Installation Guide & User Manual***

# Important Note

## **Document Privacy Note:**

Thank you for purchasing this product. Before using the unit, please read this manual carefully to avoid any unnecessary damage. The correct usage of this unit ensures fast and effect performance.

No written consent will be given by our company, or individual representing our company to copy the content of this manual in part or in full, or distribute in any form what so ever.

Except for the permission of the relevant holder, any person who copies, distributes, revises, modifies, extracts, decompiles, disassembles, decrypts, reverse engineers, leasing, transfers or sub-licenses the software, other acts of copyright infringement. All limitations applied to by law are excluded.

## **Document use statement:**

Due to the constant renewal of products, the company can not undertake the actual product in consistence with the information in the document, also any dispute caused by the difference between the actual technical parameters and the information in this document. Please forgive any change without notice. Reserve the final rights of modification and interpretation.

# Table of contents

## Installation Guide

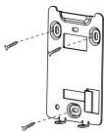
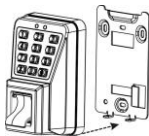
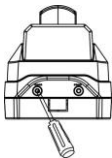
1. Equipment Installation.....	i
2. Structure and Function.....	ii
3. Lock Connection.....	ii
4. Connected with Other Parts.....	iv
5. Connected with Power.....	iv
6. Wiegand Output.....	iv
7. Communication.....	v

## User Manual

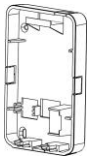
1. User Management.....	1
1.1 Administrator Operations.....	1
❖ Change Administrator Password.....	2
❖ Open the Door by Entering the Administrator Password .....	2
❖ Forgot the Administrator password .....	2
1.2 Add Users .....	3
❖ Add Users.....	3
◆ Batch registration (add series cards) .....	3
❖ Backup registered user.....	4
1.3 Authenticate User.....	4
1.4 Delete Users .....	5
❖ Delete a User.....	5
❖ Delete All Users .....	6
2. Access Control Management.....	6
2.1 Configure Unlocking Duration.....	6
2.2 Configure Authentication Mode .....	7
2.3 Configure Concealed Mode .....	7
2.4 Configure Door Sensor Mode.....	8
2.5 Configure Alarm .....	8
❖ Configure Error Operation-Triggered Alarm .....	9
❖ Configure Tamper Alarm .....	9
❖ Configure Door Sensor Alarm .....	9
2.6 Cancel the Alarm.....	10
FAQ.....	10

# 1. Equipment Installation

## Wall mount installation



- (1) Paste the mounting template on the wall. Drill the holes according to the marks on the template. (holes for screws and wiring).
- (2) Remove the screws on the bottom of device.
- (3) Take away the back plate.
- (4) Fix the back plate on the solid wall according to the mounting paper.

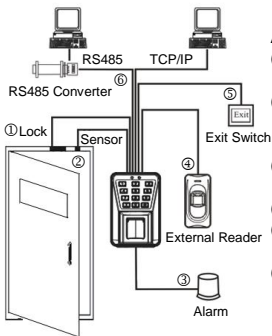


(5) Fix the device to the back plate.

(6) Tighten the screws at the bottom of the device.

Note: If it is not possible to drill on the hollow wall, please select a plastic box instead of iron plate.

## 2. Structure and Function



### Access Control System Function:

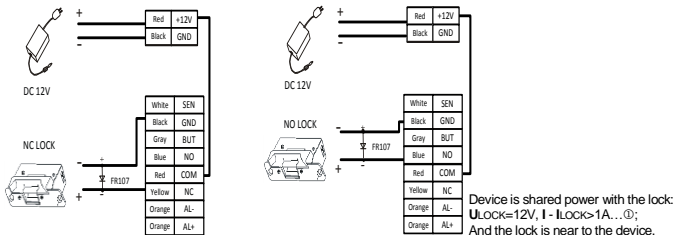
- (1) If a registered user is verified, the device will send a signal to unlock the door.
- (2) Door Sensor will detect the door is open or not. If the door is unexpectedly opened or improperly closed, the alarm will be triggered.
- (3) If the device is dismantled, it will send an alarm signal.
- (4) External Reader is supported.
- (5) It supports Exit Button; it is convenient to open the door inside.
- (6) It supports RS485, TCP/IP communications. One PC can manage multiple devices.

## 3. Lock Connection

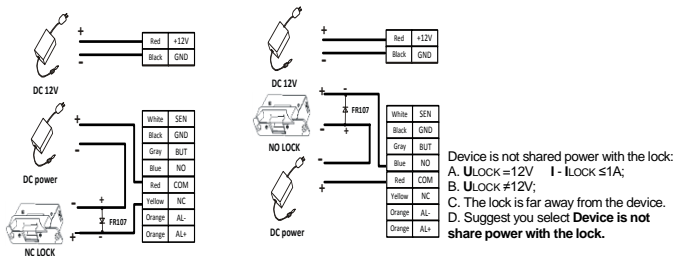
**Warning:** Do not operate with Power connected.

- (1) The system supports NO LOCK and NC LOCK. For example the NO LOCK (normally open by power on) is connected with NO terminal, and the NC LOCK is connected with NC terminal.
- (2) When the Electrical Lock is connected to the Access Control System, you need to parallel one FR107 diode (equipped in the package) to prevent the self-inductance EMF affecting the system. **Note: Do not reverse the polarities!**

(I) Device is shared power with the lock:

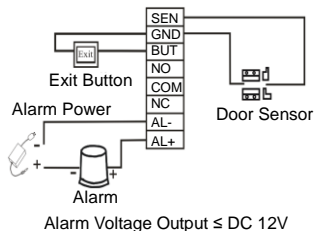


(II) Device is not shared power with the lock:

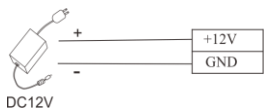


$\textcircled{1}$ : I: the output current of device;  $U_{LOCK}$ : lock voltage;  $I_{LOCK}$ : lock current.

#### 4. Connected with Other Parts



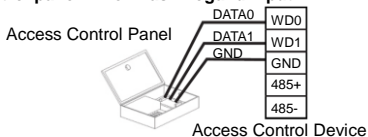
#### 5. Connected with Power



The device working voltage is **DC 12V**, and the current is **500mA** (50mA on standby). Positive is connected with **+12V**, negative is connected with **GND**.  
**(Do not reverse the polarities).**

#### 6. Wiegand Output

**The device supports standard Wiegand output, and allows to be connected with the access control panel which has Wiegand input.**



- (1) Do not exceed 90m (meters) distance between the device and Access Control Lock or Card Reader. (In the case of long distance installation, use the Wiegand Signal Extender, to minimize interference.)
- (2) To keep a balanced and stable Wiegand signal, connect the device, Access Control Lock or Card Reader on the same port of **GND** (ground).

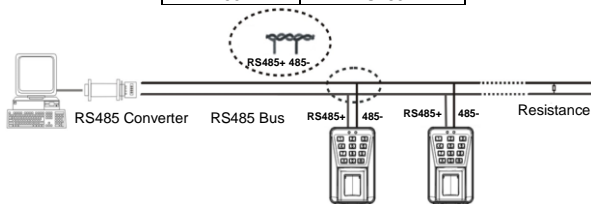
## 7. Communication

There are two ways for PC software to communicate with the device:  
RS485 and TCP/IP, and supports remote control.

### (1) RS485 Mode

Please use specified RS485 wire, RS232/485 active converter, which consists of bus-type wiring. If the communication wire is longer than 100 meters, you need to parallel a terminal resistance on the receiving end, and resistance value is about 120Ω(ohm). Terminals definition as below:

Terminals	PC Serial Ports
485+	RS485+
485-	RS485-



### RS485 Reader Function

It supports RS485 reader function, can be through the RS485 communication connected to FR1200 reader which is for slaver achieves RS485 Anti-passback function.

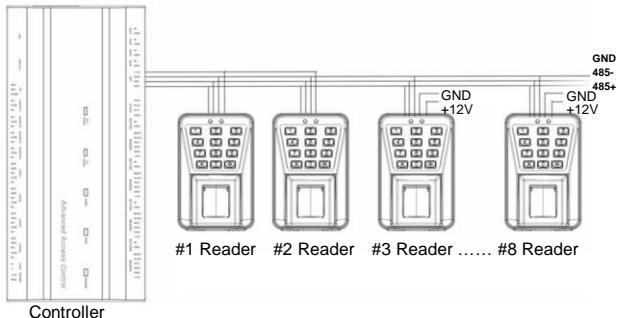
If RS485 of device is used for connecting with RS485 slave reader, then RS485 communicate to PC is disabled.

**The diagram of device connected to reader as below (The device is master):**





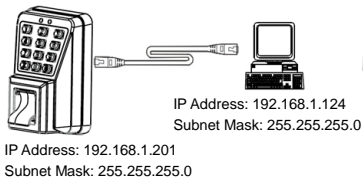
The diagram of the device connected to controller as below:



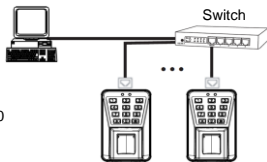
Set the 485 address (device number) by ZKAccess3.5 software.

**(2) TCP/IP Mode:**

**(A) Cross-Over cable:** the device connects to PC directly



**(B) Straight-through:** The device and PC are connected to Switch.



# Instructions

## Recommended Procedure:

**Step 1:** Power on after the device is completely installed on the wall.

**Step 2:** Change the administrator password.

**Step 3:** Register users' fingerprints, cards, or passwords.

**Step 4:** Configure access control parameters, including unlocking duration, authentication mode, concealed mode, door sensor mode, and alarm.

☺**Note:** The function like multi-card opening, first-card normal opening, register users, delete users, anti-pass back and so on in the access control system, refers to setting of ZKAccess3.5 software.

## Operation Instructions

To enter into the system setting mode, first press [\*] and [#], then enter system password and press [#] subsequently to enter into system setting mode. When enter into system setting mode, the status light (green) will be on with a beep sound.

Users should enter any functional selections within 20 seconds. The reader will automatically terminate the system setting mode function after 20 seconds.

**The function of [\*] key and [#] key:** While the device is in the state of awaiting verification, press [\*] key to enter the system, then press [#] key to confirm; while operating, press [\*] to exit.

## 1. User Management

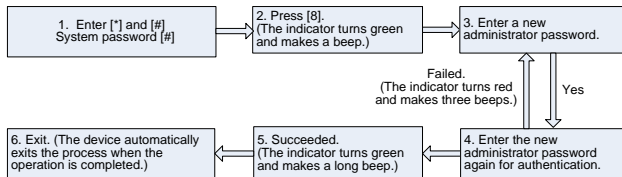
### 1.1 Administrator Operations

To ensure the security of the data in device, you can operate the device only after the administrator password is authenticated.

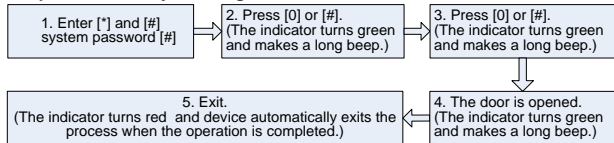
#### ☺**Note:**

1. The administrator password supports 1~4 digits, four-digit passwords are automatically verified. For passwords with less than four digits, press [#] to enter verification process.
2. The initial administrator password is 1234. You are advised to change the initial password at the beginning.

## ❖ Change Administrator Password



## ❖ Open the Door by Entering the Administrator Password



☺**Note:** This function can be used to open the door. [#] key: Confirmation key.

## ❖ Forgot the Administrator password

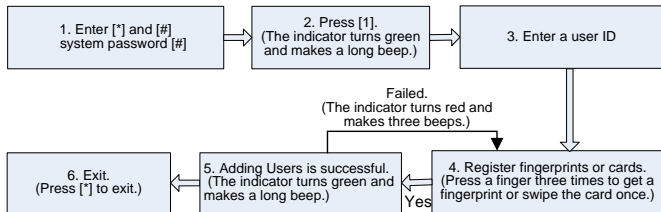
If the administrator password is forgotten, you can swap the magnet tamper switch three times after the alarm being triggered 30 seconds but no more than 60 seconds to restore initial administrator password. Meanwhile, it can restore factory settings, such as device number, IP address etc. (There is a long beep after 30 seconds of the tamper state.)

☺**Note:** The initial administrator password is 1234.

## 1.2 Add Users

Register the fingerprint or card of a user or register cards in batches.

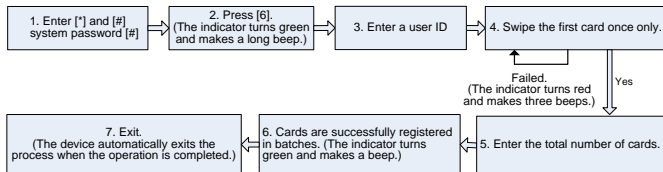
### ❖ Add Users



### ☺ Note:

1. In the process of entering the user ID, 9 digits are verified automatically. For numbers with less than 9 digits, press [#] to enter the verification process.
2. If the process of registering fingerprint or card is failed, you can register the user again after the device indicator turns green. Registered users must not be registered again.
3. Password registration: please refer to [Batch registration \(add series cards\)](#).

### ❖ Batch registration (add series cards)

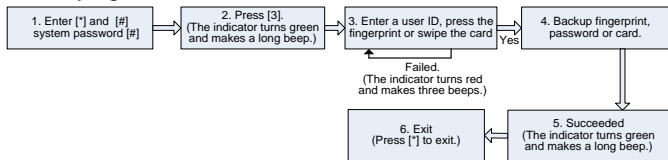


### ☺ Note:

1. In the process of entering the user ID, 9 digits are verified automatically. For numbers

- with less than 9 digits, press [#] to enter the verification process. If the user ID exists, the indicator turns red and makes three beeps.
- In the process of entering the total number of cards (0~999), three-digit numbers are automatically verified. For numbers with less than three digits, press [#] to enter the verification process. Press [\*] to re-enter the total number of cards.
  - You must clear all registered users before registering cards in batches. IDs of to-be-registered cards must be consecutive numbers.

### ◆ Backup registered user



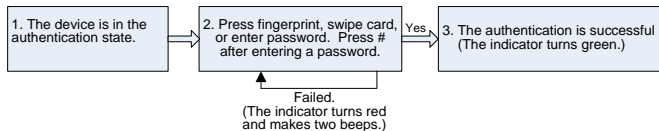
### ☺ Note:

- You can enter a user ID, press the fingerprint or swipe the card to backup registered user. The user ID, fingerprint or card must be registered, if it is not, the indicator turns red and makes three beeps.
- Backup fingerprint and password, it will backup fingerprint when you press the fingerprint, and if you input password (**twice**), it will backup the password. The indicator turns green and makes a long beep means it is successful. If it is failed, it will turn red and makes three beeps.
- One time only backup one user. Press [\*] to exit.
- You can register password in step 4, the ordinary user password supports 1~6 digits, six-digit passwords are automatically verified. For passwords with less than six digits, press [#] to enter the verification process.

## 1.3 Authenticate User

### Authenticate Users' Fingerprint/Card/Password

After the device is powered on, it enters the authentication state for users to unlock the door.



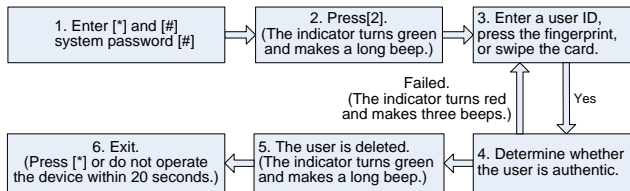
☺ **Note:**

1. Press [#] after entering a user ID for authentication, then entering a password, after that press [#].
2. Duress password and Emergency password: First press [#], enter a password, after that press [#] (You can configure the duress password and the emergency password by ZKAccess3.5 software).
3. You can open the door with the duress password when verification is password allowed only.

#### 1.4 Delete Users

Delete a user whose fingerprint or card is registered, or delete all users.

##### ◆ Delete a User

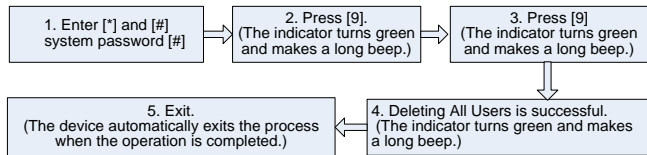


☺ **Note:**

1. You can enter a user ID, press the fingerprint or swipe the card to delete the user. The user ID, fingerprint or card must be registered, if it is not, the indicator turns red and makes three beeps. In the process of entering user IDs, 9 digit IDs are automatically verified. For IDs with less than 9 digits, press [#] to enter the verification process.

- The device automatically enters the process of deleting the next user when a user is deleted, and the indicator turns green and makes a long beep.

### ❖ Delete All Users

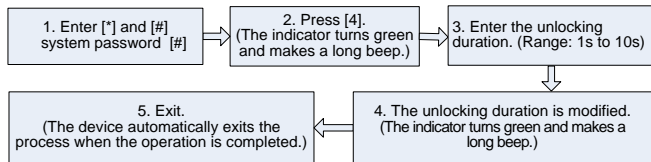


### ☺Note:

- When it passes, the indicator turns green and makes a long beep. Then the indicator turns red and makes a long beep, and the device exits the process.
- If you do not press [9] for the second time, the indicator turns red and makes three beeps, after that, the indicator turns red and makes a long beep, and the device exits the process.

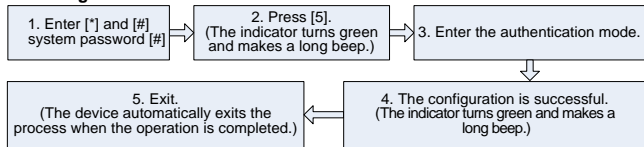
## 2. Access Control Management

### 2.1 Configure Unlocking Duration



☺Note: For the value is 10, the system confirms automatically verified, for values with less than two digits, press [#] to enter the verification process. Values greater than 10 are considered invalid.

## 2.2 Configure Authentication Mode



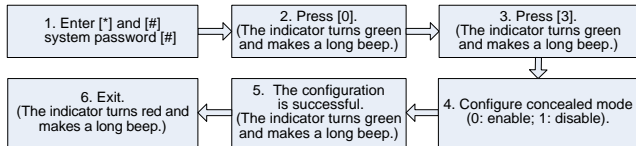
### ☺Note:

- Input digitals 1~6, the system confirms automatically. Input digitals beside 1~6, the indicator turns red and makes three beeps, the setting is failed. When the indicator turns red and makes a beep, the device exits.
- Details about the authentication mode are as follows:

Authentication Mode	type	Description
PW	1	Only password verification
RF	2	Only RF Card verification
FP	3	Only fingerprint verification
FP/PW/RF	4	fingerprint or password or RF verification
RF&PW	5	RF plus password verification
FP&PW	6	fingerprint plus password verification

## 2.3 Configure Concealed Mode

If the concealed mode is enabled, the indicator light is off when device is in standby state.



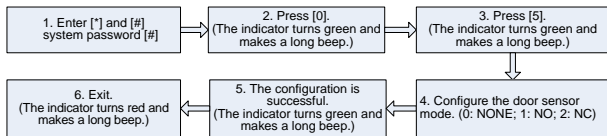
☺Note: If the concealed mode is enable, an indicator blinks to indicate the status of this function when users authenticating or administrator operation.



## 2.4 Configure Door Sensor Mode

The door sensor switch includes three modes:

- **NONE**: The door sensor is disabled.
- **NO (Normally Open)**: The door sensor will send an alarm signal if it detects the door is closed.
- **NC (Normally Colse)**: The door sensor will send an alarm signal if it detects the door is open.

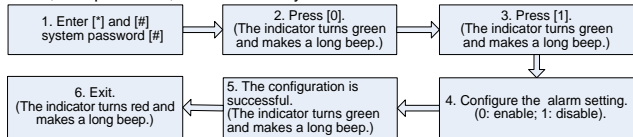


© **Note**: The door sensor mode configured here is used as the basis for the door sensor alarm.

## 2.5 Configure Alarm

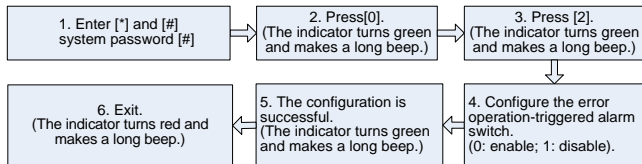
### ❖ Configure Alarm setting

The alarm switch is turned on by default. When it's disabled, Error Operation-Triggered Alarm, Tamper Alarm, the Alarm Delay for the Door Status Sensor will be disabled.



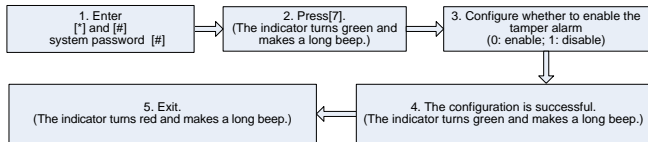
### ❖ Configure Error Operation-Triggered Alarm

Alarms will be generated if the administrator fails the authentication upon three attempts under this function enabled, and the administrator authentication is not allowed within 20 seconds.



### ❖ Configure Tamper Alarm

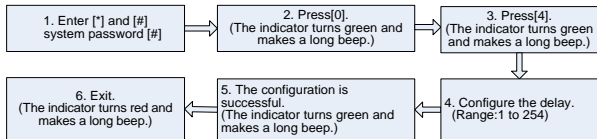
If this function is enabled, alarms will be generated when device is dismantled from the wall.



### ❖ Configure Door Sensor Alarm

If the door is inconsistent with the door sensor mode (NO or NC), an alarm will be generated.

**DSen. Delay (Door Sensor Delay):** It is to configure the time how long would the door sensor starts to check the door status.



©**Note:** When configure the delay time, three-digit values are automatically verified. For values with less than three digits, press [#] to enter the verification process. Values greater than 254 are considered invalid.

## 2.6 Cancel the Alarm

Successful user verification could cancel the alarms mentioned above.

### FAQ

Q: Does device support connecting with external fingerprint reader? How to set the RS485 address of the external fingerprint reader?

A: Yes, the device supports connecting with one external fingerprint reader via RS485. For the setting of RS485 address, please refer to corresponding document of reader. Normally, the RS485 address is set via DIP Switch, and the RS485 address of reader only can be 0 or 1.

Q: Which Wiegand-out format does device support?

A: The device is preset with Wiegand 26-bit Output format, it also supports Wiegand 34-bit Output format and other 9 formats. (Please edit Wiegand-out format on ZKAccess3.5.2.1449 or above version.)

Q: What's the users and fingerprint capacity of device?

A: 30,000 users and 3,000 fingerprint templates.