

# User Manual

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Thank you for selecting Keyking products. Please read this manual thoroughly before using.



TA7004NT TimeAttendance



**KEYKING GROUP LIMITED**

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# Chapter 1 System Description

## 1.1 Overview

TA7004NT TimeAttendance Terminal is a new developed with an LCD screen access control attendance machine from Shenzhen KEYKING Technology Co., Ltd.. When used as an attendance machine, instead of the traditional “card”, employees only need to swip the registered card on the attendance machine to complete the attendance operation. When used as an access control machine, it replaces the traditional “key”. The card can be displayed in the effective distance of the sensing area, and it can enter and exit the “own space”. It can independently control the two-way access of a door. The entrance and exit function can be achieved by swiping the card, or by using the traditional swiping card + exit button. It facilitates the attendance and access of employees to work, facilitates the statistics of management personnel, and assesses the attendance rate of each department; effectively manages and controls the access and attendance of personnel, and can be widely applied to various agencies, enterprises and institutions.



Fig1-1 TA7004 appearance

### Model defined:

TA7004NT-P---read ID、HID、AWID cards

TA7004NT-U---read CPU、Mifare cards

## 1.2 Feature

1. It integrates the functions of password keyboard, reading head, single door access control and Time attendance. It is a new generation product that can meet the needs of many customers. Its three flexible using are showed as follows:
  - ✓ Time Attendance: It can be connected to the DPU3000 series controller directly through RS485 or TCP interface and connected to the host computer at the same time, and managed by Sphinx4.4 access control software;
  - ✓ Single-door control: On the basis of the Time attendance, the TA7004NT can be used as a single-door access controller; and an external card reader can be connected for access control.
  - ✓ Wiegand card reader with LCD: display of company name and clock; Wiegand 26 or Wiegand 34 signal can be output; can be used with any Wiegand format access controller.
2. With one exit button, one door magnet, one Wiegand26/34 signal input/output (IC, ID card can be read, IC card reads its serial number), two auxiliary inputs, one set of relay output, one RS485 communication Interface, a doorbell switch interface;
3. Can be connected to Wiegand26/34 card reader (including keyboard type card reader), support card, password, card + password, super password and other access modes;
4. OLED screen ,content display customization; full Chinese menu interface with backlight; can display the cardholder name and card number.
5. Can be networked (485 up to 127, unlimited in the TCP connection state), can also be used offline. The device parameters can be set via the keyboard when offline.

6. When the device is offline ,The system can register 100 proximity cards in Wiegand26/34 on the attendance terminal. When it is online, it uploads and downloads automatically, the system can register up to 30,000 cards and store 200,000 events.
7. 8 kinds of alarm clocks can be customized to make reminders to work;
8. The system can arbitrarily specify the time combination within 365 days, and 124 groups of users define the time. Each gate can authorize 31 different time groups, 7 groups of holiday time definitions, each group is unlimited, each group holiday can be composed of any few days within 365 days, and the cardholder system that unlocks unauthorized holidays will automatically prevent. 2 sets of temporary time groups. Once the temporary date passes, the system can automatically notify all controllers to adjust the date schedule. The system automatically calibrates the controller's clock to ensure event time and access control accuracy.
9. Remote control of any door point, various alarm event functions: door open timeout, door closing timeout, intrusion alarm, duress alarm, tamper alarm, fire alarm, etc.

### 1.3 Specification

Processor	Texas Instrument ARM@CortexTM-M3 core 32-bit embedded processor with dual watchdog protection
Memory	Program memory: 256KB ROM Data Memory: 512KB SRAM
Capacity	30,000 proximity cards, 30,000 batches; 200,000 event stores
Format	Support all 26, 34 Bits Wiegand input devices (fingerprint recognition reader, ID/IC card

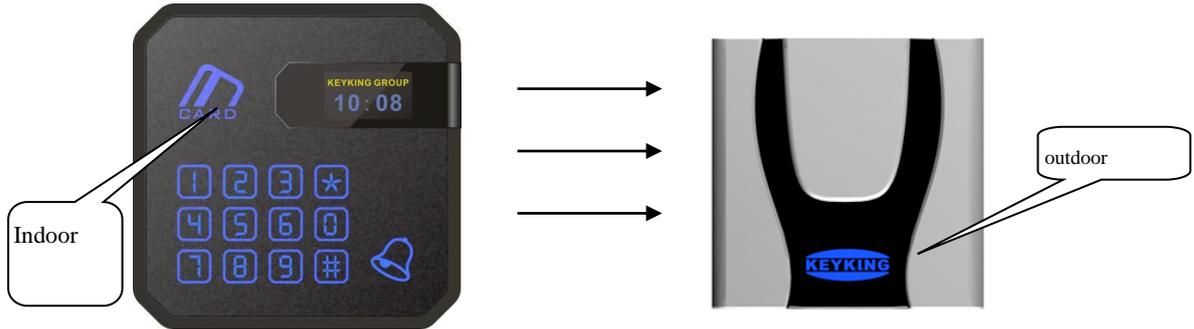
	reader);Compatible with card readers such as Keyking, Motorola/INDALA, HID, etc.
Communication	TCP/IP, direct access to the LAN; RS485 bus, a single bus can be connected to 127 controllers, data transmission distance $\geq$ 1200 meters; communication rate: TCP: 100M; RS485: 9600 1, 1, n Can communicate with the DPU3000 series controllers.
Input/output	Reader input C type electric lock relay output, 3A contact current, 12V DC, LED indication Exit button, sensor
Protection	Input overcurrent protection, automatic recovery when normal All inputs/outputs with voltage dynamic protection All relay outputs with transient overvoltage protection
Self-check	Support
OLED screen	Highlight, orange, blue two-color display
Power	Voltage: 12VDC; Current < 0.3A
Environment	Temperature -20°C ~ 60°C, Humidity 0 ~ 90%
Dimension (mm)	89*89*20
Weight	150g
Software	Windows 2000/XP/Win7/Win8

## 1.4 Application Mode

- ◇ standalone, no external card reader



◇ outdoor with reader, indoor with TA7004NT



◇ indoor with reader, outdoor with TA7004NT



# Chapter 2 Wiring

## 2.1 TA7004NT Appearance



Fig 2-1

### LED:

- Blue LED for power indication.
- Green LED for card reading indication.

### Details of Keypads:

No.	Mark	Definition	Output(BIN)	No.	Mark	Definition	Output(BIN)
1	1	Digital 1	1	7	7	Digital 7	111
2	2	Digital 2	10	8	8	Digital 8	1000
3	3	Digital 3	11	9	9	Digital 9	1001
4	4	Digital 4	100	10	0	Digital 0	0
5	5	Digital 5	101	11	*	Cancel / Start	1010
6	6	Digital 6	110	12	#	Enter / Confirm	1100

## 2.2 Socket

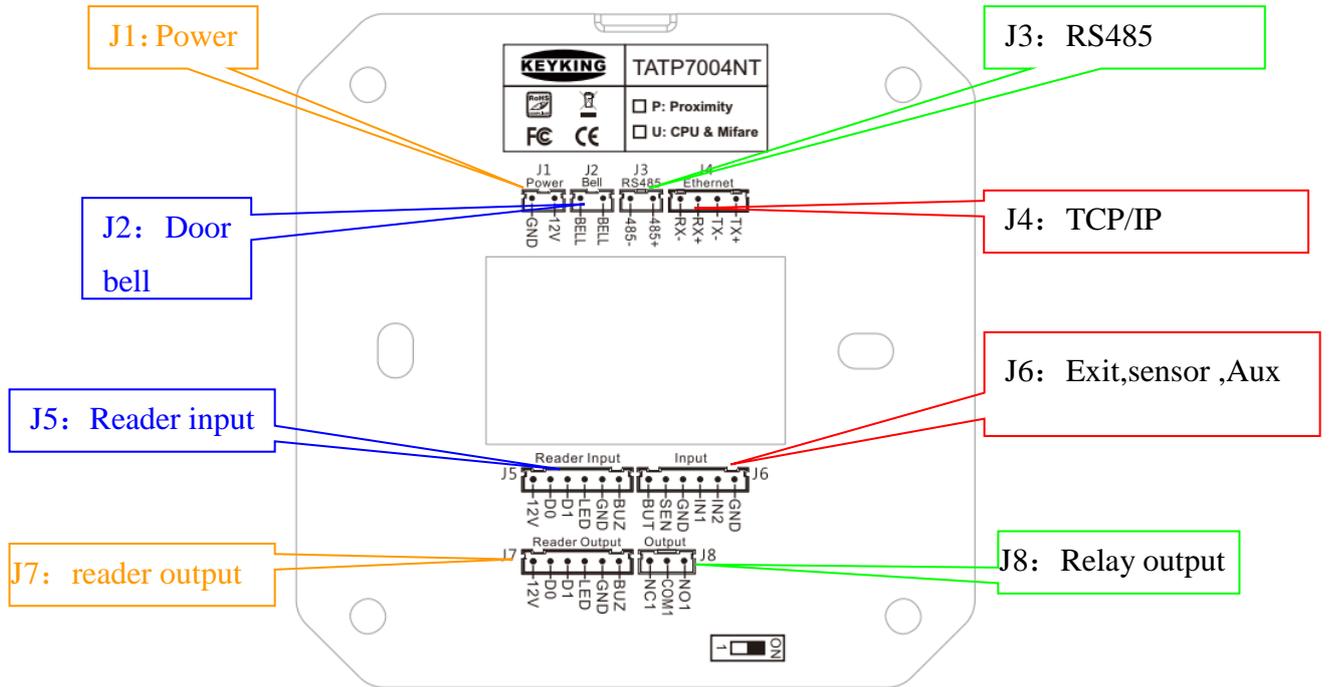


Fig 2-2

RJ45 connector through a standard cable, as shown below:



Fig 2-3

No.	PIN	Mark	Definition	No.	PIN	Mark	Definition
J1	1	GND	Power	J6	17	BUT	Exit button ,sensor,Aux in
	2	12V			18	SEN	
J2	3	BELL	Door bell		19	GND	
	4	BELL			20	IN1	
J3	5	485-	RS485		21	IN2	
	6	485+			22	GND	
J4	7	RX-	TCP/IP	J7	23	12V	Reader output
	8	RX+			24	D0	
	9	TX-			25	D1	
	10	TX+			26	LED	
J5	11	12V	Reader in		27	GND	
	12	D0			28	BUZ	
	13	D1		J8	29	NC1	Relay output
	14	LED			30	COM1	
	15	GND			31	NO1	
	16	BUZ					

**Wiring note:**

**J1: Power Supply**

- ✓ 12V: DC 12V Positive
- ✓ GND: Ground

**J2: Door Bell**

- ✓ Normally, J2 outputs open signal if bell is not pressed.
- ✓ If door bell is used, door bell is pressed and J2 will outputs close signal to drive door bell rings.

**J3: 485 Interfaces**

- ✓ An IC232 or RS485HUB is needed to connect host PC.
- ✓ Customer can set all configurations when it's connected to host PC.

**J4: TCP/IP Interfaces**

- ✓ Available to use a switch or directly connect to host PC via Ethernet port.
- ✓ Customer can set all configurations when it's connected to host PC.

**J5: External reader**

- ✓ 12V: Positive power supply
- ✓ D0: wiegand input.
- ✓ D1: wiegand input.
- ✓ LED: indicator.

- ✓ GND: Ground。
- ✓ BUZ: buzzer。

### J6: Magnetic Switch, Rex Button, Auxiliary Input

- ✓ BUT: Exit button
- ✓ SEN: Sensor.
- ✓ GND: Ground
- ✓ IN1: Aux input 1.
- ✓ IN2: Aux input 2.

### J7: Reader output

- ✓ 12V: Positive Power supply。
- ✓ D0: Wiegand output。
- ✓ D1: Wiegand output。
- ✓ LED: LED indicator。
- ✓ GND: Negative power supply。
- ✓ BUZ: Buzzer。

### J8: relay output(Lock)

- ✓ Connect the power and the electric lock according to actual needs.

## 2.3 Wiring

### J8: Relay output

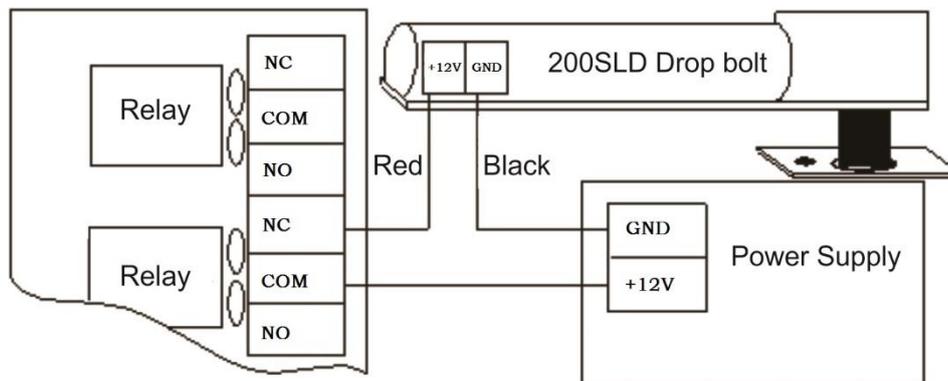


Fig 2-4 Drop bolt (Fail Safe)

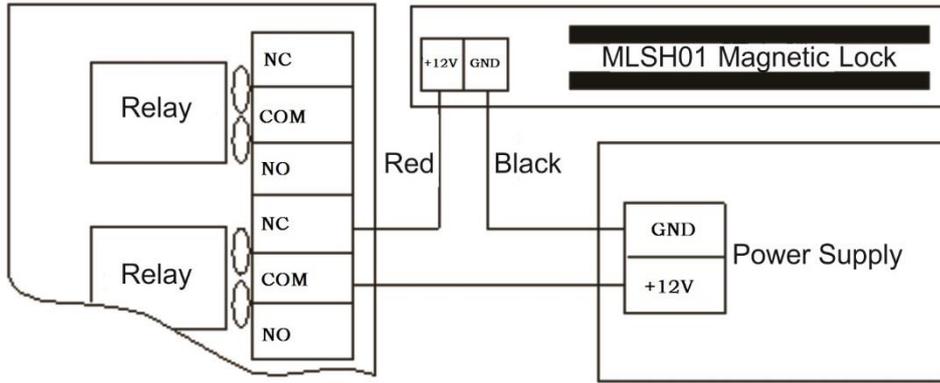


Fig 2-5 Magnetic Lock (Fail Safe)

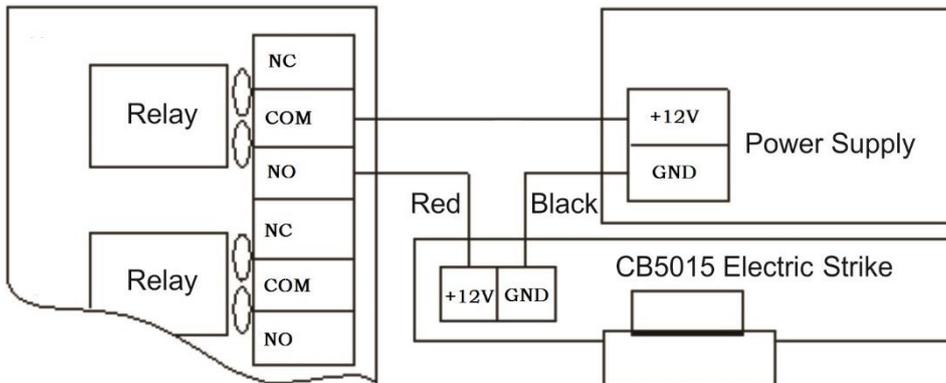


Fig 2-6 Strike (Fail Secure)

## 2.4 RS485 Bus

TA7004NT can communicate via half-duplex RS485 bus, up to 1200m communication distance. Terminals use series connection.

Please make sure power supply is in off state before do wiring. This helps to avoid any damage maybe caused to the device.

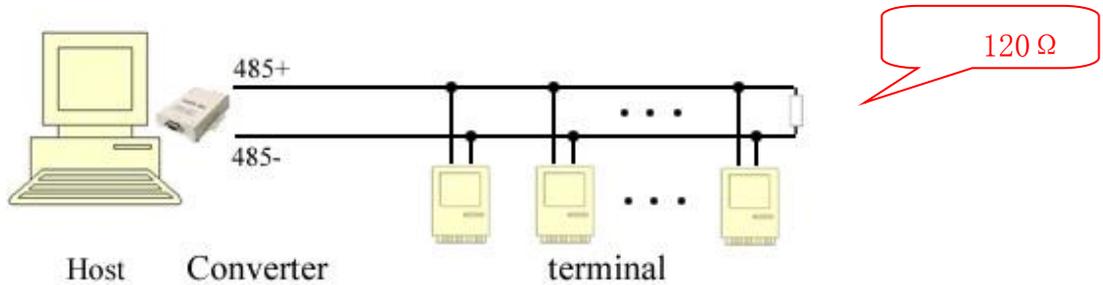


Figure 2-7

- ✓ Twisted-pair: Twisted-pair are used to connect controller to controller. No GND is needed.

- ✓ Series connection: Terminals are connecting via series connection. A multi-bus RS485HUB is needed if customer needs parallel connection.
- ✓ RS485 Single Point Ground: If controller transmission line is with shielding or needs ground line, then all controllers' transmission line can be grounded in either controller. Please note do not gather all metal side to the GND of controller.
- ✓ Terminal Resistance: Series connected at the end of the circuit.

## 2.5 TCP/IP

TA7004NT network connecting

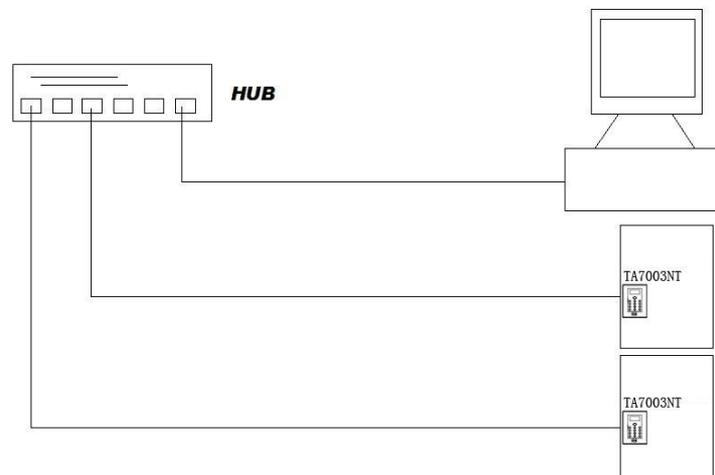


Fig 2-7

RJ45	definition
1	TX+
2	TX-
3	RX+
6	RX-

Normal net cable (to switch)

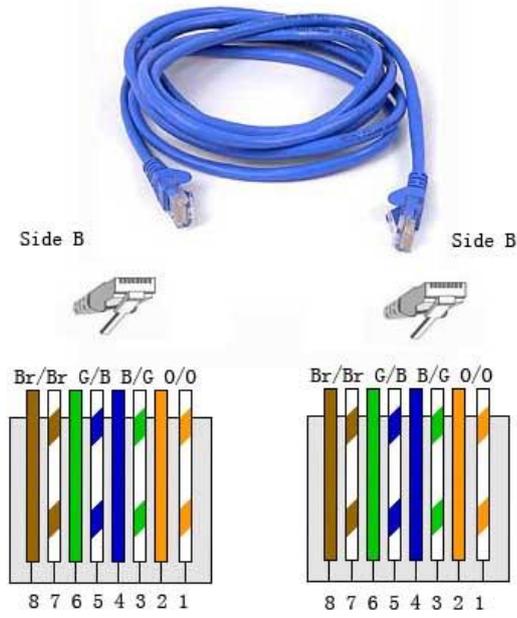


Fig 2-8

Crossed cable (to PC)

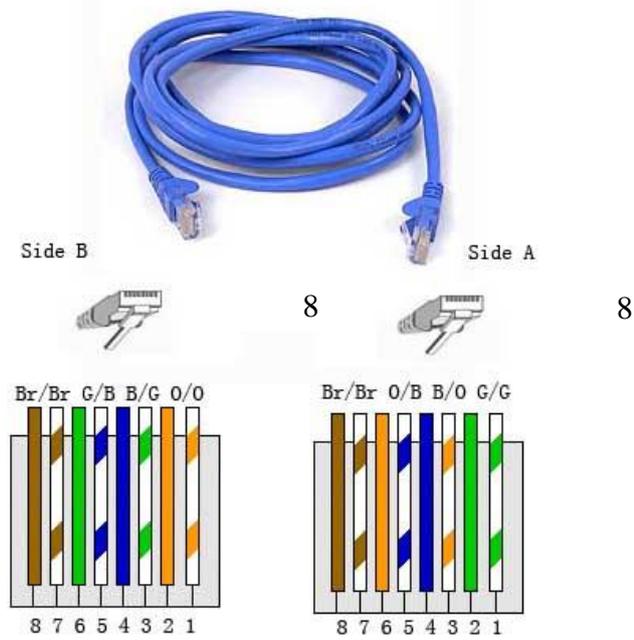
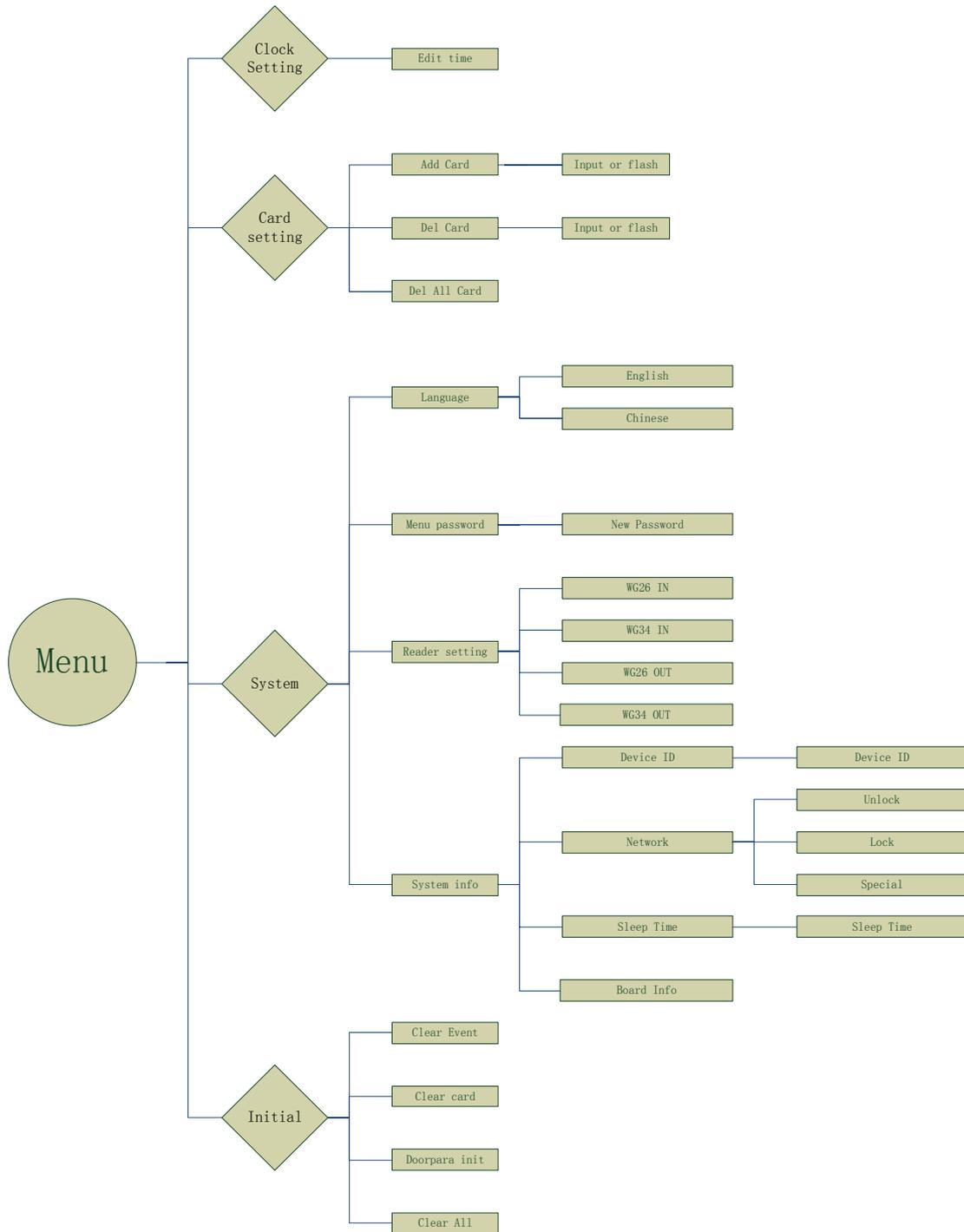


Fig 2-9

# Chapter 3 Guide

In the idle state, press \*39# to enter the menu setting interface. the \* key is the cancel key, the # key is the OK key, the number 3 is the down key, and the number 9 is the up key. Menu structure is shown below:



## 3.1 Clock setting

### 3.1.1. Edit Time

1. In idle state, press \*39# to enter menu.



2. Press “#” to edit time.



## 3.2 Card setting

### 3.2.1. Add Card

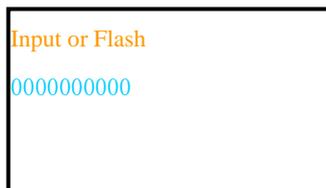
1. Use button 3 or 9 to select Cards when enter the manage menu.



2. Use button 3 or 9 to select add card



3. Press # to enter register interface



4. Input a ten digits number or flash the card you want to register on TA7004NT, the card number will be read by TA7004NT automatically and shows up on the screen.

```

Input or Flash
0123456789
    
```

5. Press # to enter the next menu.

```

Number:0123456789◆
Password:0000
DispInfo:00
Confirm?
    
```

Verify the card information and input the password if needed then select “Confirm?” and press# to confirm. If customer wants to add another or more cards, please go back to step 3 and repeat the process.

### 3.2.2. Delete Card

1. Use button 3 or 9 to select card setting

```

Clock Setting
Card Setting ◆
System
Initial
    
```

2. Use button 3 or 9 to select Del Crard

```

Add Card
Del Card ◆
Del ALL card
    
```

3. Press # to enter delte card interface

```

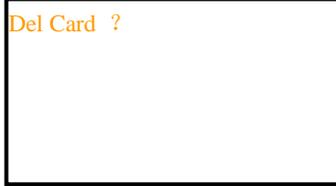
Input or Flash
0000000000
    
```

4. Input a ten digital number or flash the card you want to register on the TA7004NT,the card number will be shown on the screen .

```

Input or Flash
0123456789
    
```

5. Press # to enter the next menu

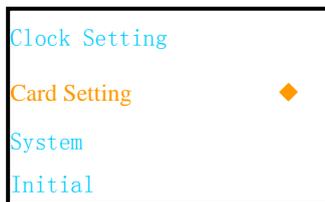


Note: When the screen shows Del Card OK, it means you have successfully deleted a registered card. If customer wants to delete more cards, just continue flashing card and press # to confirm deleting. There is no need to go back to step 2.

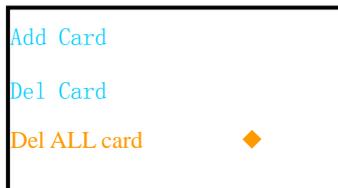
### 3.2.3. Delete All Cards

Use Del All Cards to clear all cards

1. Use button 3 Or 9 to select card setting



2. Use button 3 Or 9 to select Del all card



3. press “#”, card cleared

## 3.3 System

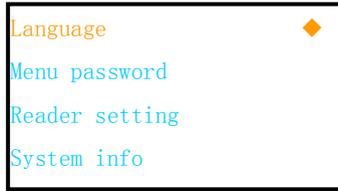
### 3.3.1. Language

TA7004Nt support two languages (english and chinese)

1. In idle state ,press \*39# into menu ,use button 3 or 9 to select system



2. Press # to enter system interface



3. Enter language , select english or chinese



4. Press # to confirm .

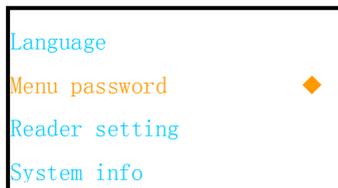
### 3.3.2. Menu Password

There is no defaulted password, customer can set favored password. Steps:

1. Use 3 or 9 to select system



2. Select Menu password



3. Press # to enter menu password



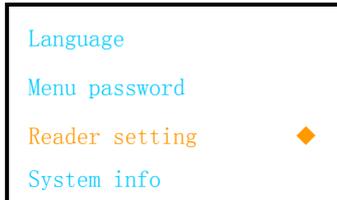
4. Use the keypad to input 6 digits password and press # to confirm. User will have to input the password if he wants to enter manage menu.

### 3.3.3. Reader Setting

1. Use button 3 or 9 to select system :



2. Select reader setting



3. Press # to confirm setting



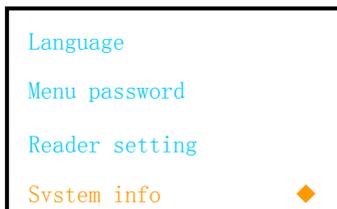
### 3.3.4. System Info

#### 3.3.4.1 Device ID

1. Use button 3 or 9 to select system:



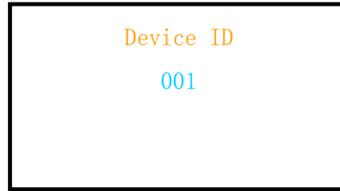
2. Select system info



3. Press # to enter interface



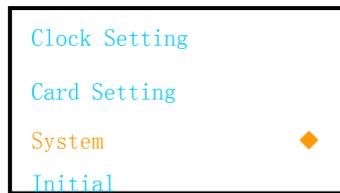
4. Use button 3 or 9 to select Device ID and press # to confirm.



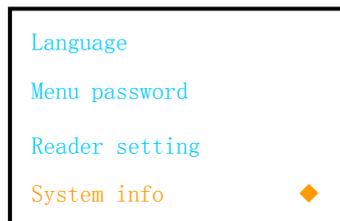
Press # to confirm Device ID setting. Device ID must be set when using multiple TA7004NT while it's not necessary for standalone.

### 3.3.4.2 Network

1. Use button 3 or 9 to enter system



2. Select system info



3. Use button 3 or 9 to select network



4. Unlock means IP can configure ,lock means IP cannot be changed ,special means 10.1.1.10

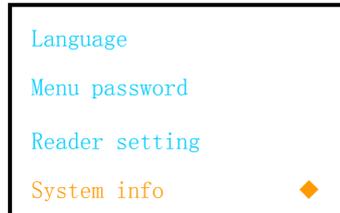


### 3.3.4.3 Sleep time

1. Use button 3 Or 9 to enter system



2. Select system info



3. Select sleep time



4. Input sleep time



#### 3.3.4.4 Board Info

Use to check TA7004NT version and production date.

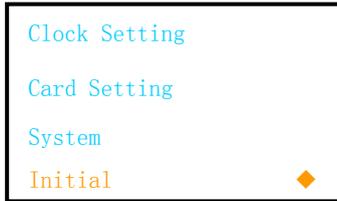
Example:

Version: .TA7003 Ver 03.00  
Date: 20100415 (Programmed date 2010-4-15)  
IP Address: 192.168.1.100  
MAC Address: 0010F0040413

## 3.4 Initial

### 3.4.1. Clear event

1. Use button 3 or 9 to select initial



2. Press # to enter interface

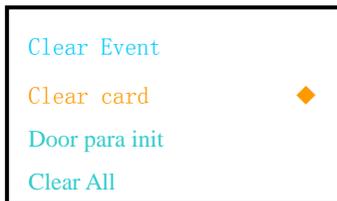


### 3.4.2. Clear Card

1. Press \*39# to enter menu ,then select initial



2. Use button 3 or 9 to select clear card



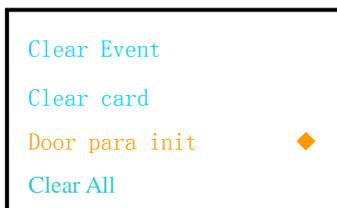
3. Press # to cleaar card

### 3.4.3. Doorpara Init

1. Use button 3 or 9 to select initial



2. Select door parament initial



3. Press # to initial the parament

### 3.4.4. Clear all

If somehow the entire data, time, password or work mode is messed up, we can use Clear All to reset the controller to defaulted state.

1. Select initial



2. Select clear all



Press # again to confirm Clear All and all configuration will be set to defaulted.

## 3.5 Application Mode

1. By Card

Steps: 1. Register your card by using Add Card in the manage menu. 2. Flash the card on TA7004NT. (3-10cm read range) 3. The screen shows card number, owner name. 4. Relay responds, door open.

Please note that if the card is not registered, the TA7003NT will beep three short sounds and shows invalid card on the screen. Door will stay closed.

2. By card + PIN

Steps: 1. Register your card and set password by using Add Card in the manage menu. Password is limited to 4 digits. 2. Flash the card on TA7004NT. (3-10cm read range) Input your password after a long beep sound and press # to confirm. Password should be inputted in 8 seconds after flashing your card.

# Chapter 4 Installation

## 4.1 Install in the wall (based on Internal back box)

1. Install a Reader Back Box inside wall: Determine an appropriate mounting position for the reader. Install a single or double standard electrical box (86\*86mm) inside wall.

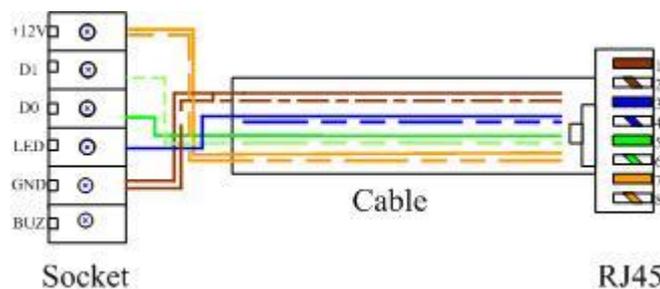


a). Reader Back Box (Standard Electronic Box, single)

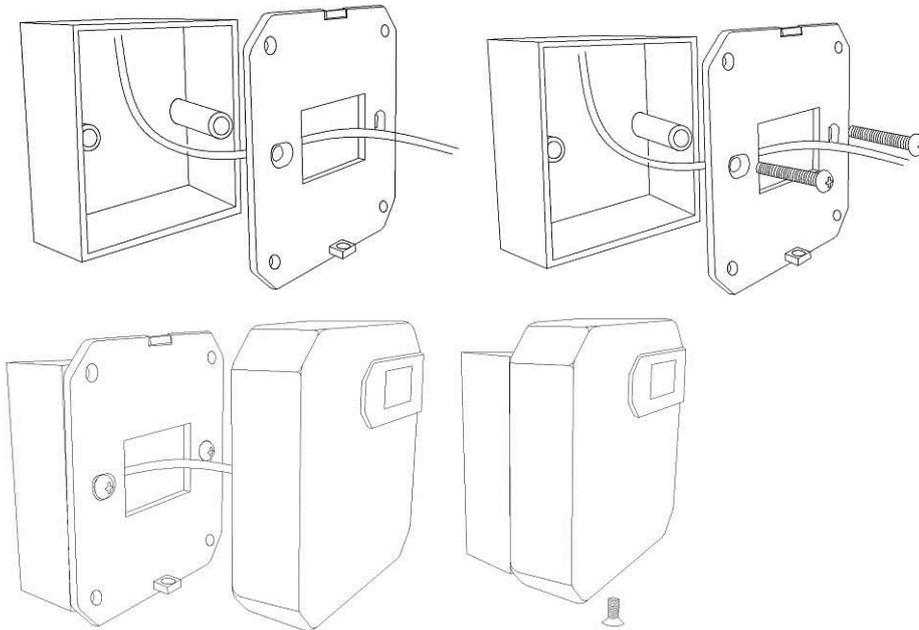


b). Reader Back Box (Double)

2. Route: Route the interface cable from the reader to the Host.
3. Wiring: Install all wires to the green connector according below image.



4. Plug the Green Connector: Plug the green connector to the reader socket.
5. Set the JUMPER (Output mode): select W26 or W34 bits output of reader.
6. Mount the reader body: Mount the reader body to the Electronic Box (Reader Back Box) using the two screws. Two #6-32 x 1 inch screws are provided for mounting to a gang box or metal surface.
7. Put the top cover and face plate.



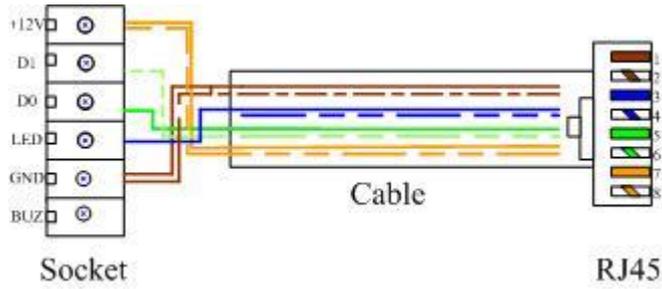
## 4.2 Install on the wall (based on surface back box)

1. Install a Reader Back Box on wall: Determine an appropriate mounting position for the reader. Install a single or double standard electrical box (86\*86mm) on the wall using 4 screws.

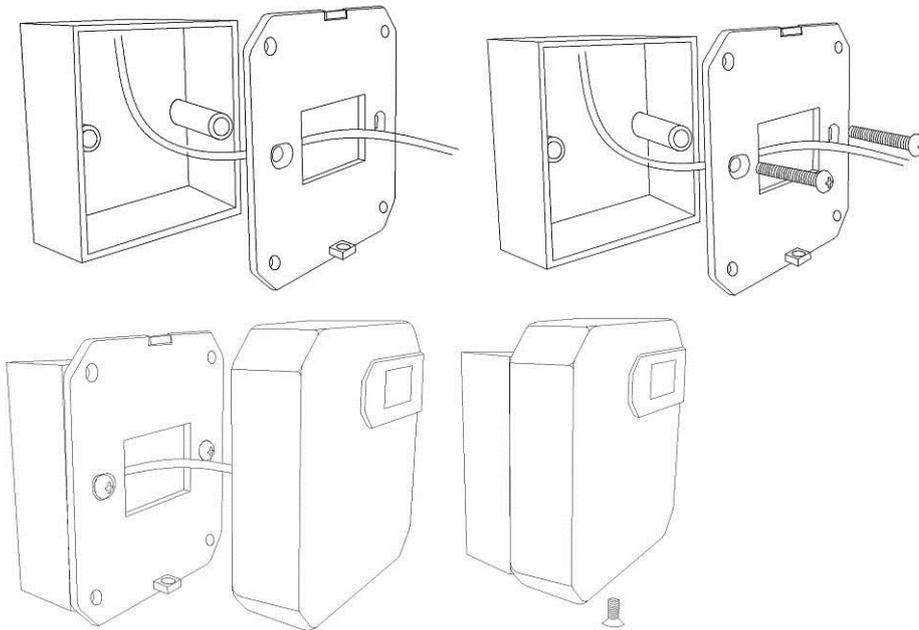


a). Reader Back Box (Surface, Standard Electronic Box, single)

2. Route: Route the interface cable from the reader to the Host.
3. Wiring: Install all wires to the green connector according below image



4. Plug the Green Connector: Plug the green connector to the reader socket.
5. Set the JUMPER (Output mode): select W26 or W34 bits output of reader.
6. Mount the reader body: Mount the reader body to the Electronic Box (Reader Back Box) using Two #6-32 x 1 inch screws.
7. Put the top cover and face plate.

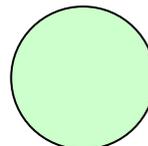


### 4.3 Install on the wall (Surface, Without Back Box)

1. Drill a  $\phi 30$  hole on the wall: Drill a  $\phi 30$  hole using a professional drill.



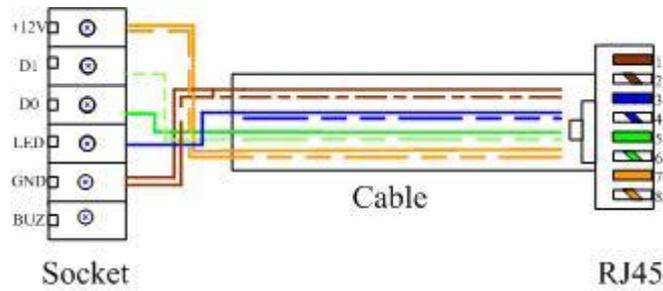
a).  $\phi 30$  drill, professional tool



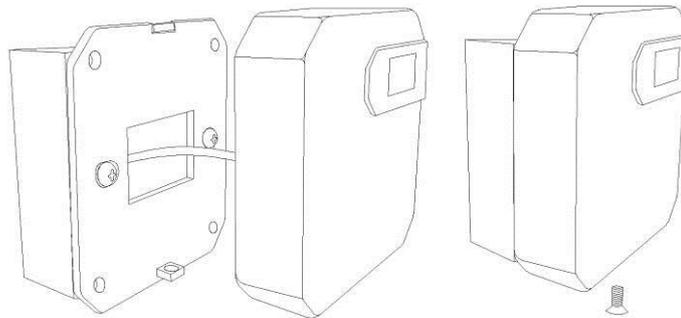
b). A hole on the wall,  $\phi 30$

Note: This drill can drill the metal wall and wood wall, can not drill stone or cement wall.

2. Route: Route the interface cable from the reader to the Host.
3. Wiring: Install all wires to the green connector according below image.



4. Plug the Green Connector: Plug the green connector to the reader socket.
5. Set the JUMPER (Output mode): select W26 or W34 bits output of reader.
6. Mount the reader body: Mount the reader body to the Electronic Box (Reader Back Box) using the two screws which is  $\phi$  4, 30mm length.
7. Put the top cover and face plate.



## Chapter 5 Trouble shooting

NO	Descriptions	Solution
1	No response for flashing (indicator off, buzzer no beeping)	<ul style="list-style-type: none"> <li>● Power problem (check power supply)</li> <li>● Invalid card type (use supported card)</li> </ul>
2	Door stays opened	<ul style="list-style-type: none"> <li>● Set short relay responding time in manage menu</li> </ul>
3	Password missing	<ul style="list-style-type: none"> <li>● Reset password in PC.(Connect to PC first)</li> </ul>
4	Can not open door by flashing card	<ul style="list-style-type: none"> <li>● Device not powered up (TA7003NT、lock)</li> <li>● Invalid card (register your card)</li> <li>● Door open mode (Set to Card, not Card + PIN)</li> </ul>
5	Set door open mode as "Card + PIN" in normal state, but can not open the door by card + PIN.	<ul style="list-style-type: none"> <li>● Invalid card (register your card)</li> <li>● Wrong password (Check password or set a new one)</li> <li>● Press # when finish entering password</li> <li>● Enter password 3 or 4 seconds later (must be entered in 10 seconds)</li> </ul>
6	Can not open the door by PIN when it's normal state.	<ul style="list-style-type: none"> <li>● Fail add PIN user (Retry)</li> <li>● Wrong password (enter the password again)</li> <li>● Forget to press "*" before entering PIN.</li> <li>● Forget to press "# " after entering PIN.</li> <li>● Wrong door open mode (To set door open mode as PIN or Card + PIN)</li> </ul>
7	Door bell not working	<ul style="list-style-type: none"> <li>● No connected door bells</li> <li>● Cable problem</li> <li>● Faulty door bells</li> </ul>
8	Wrong Time/Date	<ul style="list-style-type: none"> <li>● Set Time/Date in manage menu.</li> </ul>