AC-201

RFID Access controller

User Manual

Content

Statement: The manufacturer reserves the right to change the technology and specification without notice in advance.

Chapter one Production introduction

This is integrated with time recorder, PWD door controller, single-door controller, reader with Chinese character display and double door controller. It is widely used in door controller, time recorder, real-time patrol and parking lot etc.

1. Main function features

1) All-purpose and wide application

- The product is integrated with PWD keyboard, reader in Chinese, single door controller, time recorder and double door controller. It is optional of button and no button, computer white and champagne color. The product is a new-generation production with high performance rate that can meet various customers' demand.

2) Advanced technology, stable and reliable.

- All input and output pots can prevent shock from static and power. It has strong anti-interference ability and has power failure resisting design. The PCB board has moisture proof and corrosion protection and can adapt to different rough whether.

3) Dynamic definition, flexible application

- One build-in card reader (EM or Mifare), two sets of W26 interface, two sets of sensor input, two sets of button input, two sets of relay output, one set of bell port and one set of RS485 communication interface.
- Re-define the IO interface. For example, W26 port will be defined as W26 standard output or input, the relay can be defined as door controller, bell or alm output, the sensor can be defined as fire alm signal.
- Support hardware updata on-line

4). Chinese-English menu, easy application

- Chinese-English Menu port with light, display the owner's name and work number.
- Issue public short message and personal short message
- 16 alm times are available. The alm supports working day setting
- The clock modification parameter can ensure the correction of time for a long time.
- It can be networked (255 sets at most) and also be in off-line. It can complete the parameter setting by keyboard when is in off-line.

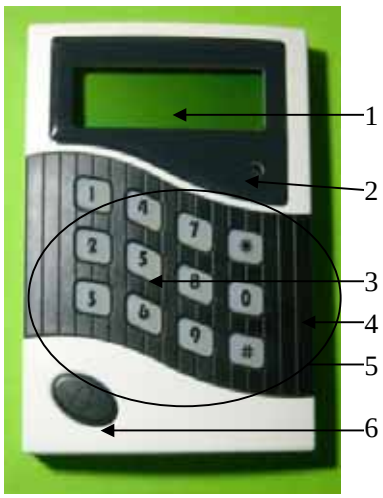
5) Professional door controller, powerful function

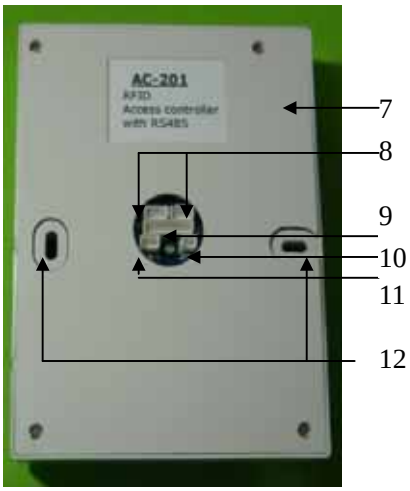
- Door control: 2 doors, standard wiegand 26 interface. It can connect with world famous reader such as HID and Motorola.
- Support 2500 card holders and store 25000 pieces of card reading information and alm events.
- 32 time periods/64 time sets/16 application groups/8 types of holidays/validity period for card/card PIN (6 numbers)
- The product has two layers of A.P.B and mutual lock when the hardware is off-line. (Open only one door for each time)
- Only PIN, only card and card & PIN are available. It can also support duress PIN and super PIN.
- Soft control of any door, various alm incidents functions: open time-out, close time-out, intrude alm, force alm, burglar alm and fire alm etc.

2. Main technical parameter

Working voltage	AC/DC 8~25V
Power consumption	<1W
Data saving	>10 years (after power failure)
Total records	25000 pieces
Card control	2000 pieces
LCD resolution	122×32 DOTS
Build-in word base	16×16 national class two character base.
Communication mode	RS485
Wiegand 26 port	Two
Relay output	Two
State input	Four
Card reading type	EM compatible
Reading distance	5—10cm
Networking capacity	255 sets
Working temperature	-20℃—70℃
Working humidity	20%—90%
Storage temperature	-25℃—85℃
Dimension	L120×W88×H 18mm
Weight	160g

3. Structure description





1、Liquid crystal display
2、indicator
3、keyboard
4、black front cover
5、card induction area
6、bell button
7、 rear patch
8、 W26 port x 2
9、 main I/O port
10、Bell Port
11、RS458 comm. port
12、installation hole

4. Fast index list

1) Display icon index

Icon	Meaning
☜	Current option
↓	There is some information following, press < 9 > to review.
↑	There is some information above, press < 7 > to review.
☐	There is no chosen item in the check box.
☑	There is chosen item in the check box.
○	There is no chosen item in the radio button.
⊙	There is chosen item in the radio button.

2) Keyboard function index

Key	Function
< 0 >< 1 >< 2> **< 3 >< 4 >< 5 >** **< 6 >< 8 >**	Number input
< 7 >	Number input or Up
< 9 >	Number input or Down
<*>	Cancel the operation Return to the high-authority menu Escape multiple choice or single choice and save the choice.
<#>	Confirm the operation Enter into the submenu Choose multiple choices or single choice.

3) Main menu index:

Menu_Main
|—clock
| |—set time
| |—adj time
| | |—⊙ adj not
| | |—○ adj fast
| |—○ adj slow
| |
| |—alm
| | |—☑alm 01->
| | | |—☑enable
| | | |—alarm
| | | |—delay
| | | |—weekset ☑ Sun☑ Mon…☑ Sat

| | | 。
| | | 。
| | |—☑ alm 16->
| | | (Ditto)
| Card
| |—add card
| |—update card
| |—Del card
|
|—system
| |—Model ID
| |—light mode—○*NC*、⊙*NO*、○*Auto*、○*time zone*
| |—beep hint—☑*keys*、☑ *clock*、☑ *hints,*
| |—baud rate—○*2400bps*、○*4800bps*、⊙*9600bps*、○*19200bps*
| |—Rec option—☑ *in rec*、☑ *out rec*、☑ *event rec*、☑ *cycle*、☐ sameness、☑ tot alarm、☐5-digit
| |—menu PWD
| |—Sys info
| |—clear…
| |—updata…
|—door
| |—DR 1
| | |—authority
| | | |—timer—(0-31)
| | | |—time zone—(0-63)
| | | |—holiday
| | | |—APPset—(0-15)
| | |——control mode⊙ *in and out*、○ *only in*、○ *any out* 、○*A.P.B.*
| | |—entry mode—⊙ *only card*、○ *only PIN*、○ *card &PIN*
| | |—sensor type—⊙ *sensor NO*、○ *sensor NC*、○ *fire NO*、○*fire NC*、○ *null*
| | |—button—⊙*NO*、○*NC*、○*null*
| | | |—open time
| | |—close time
| | |—first NO—⊙ *ON*、○ *OFF*
| | |—duress PIN
| | |—access PIN| |
| |—DR 2
| | (Ditto)
| |— DR 1->2
| |— DR 2->1
|—port
| |—relay 1—⊙ *lock 1*、○ *lock 2*、○ *bell*、○ *alm* 、○ *null*
| |—relay 2—○ *lock 1*、⊙ *lock 2*、○ *bell*、○ *alm* 、○ *null,*
| |——W26 port 1⊙ *in 1*、○ *out 1*、○ *in 2*、○ *out 2*、○ *W26 out* 、○ *null,*
| |—W26 port 2—○ *in 1*、○ *out 1*、⊙ *in 2*、○ *out 2*、○ *W26 out* 、○ *null*
| |—Local reading—⊙ in 1、○ out 1、○ in 2、○ out 2、○null
| *Language —⊙Chinese —○English*

Operation index for common keys

Go to Setup Menu

Press <*> and <#> (<*> first, then <#> soon after) at the initial state to enter into the menu state.

Menu Browse

The menu is in tree structure. In some submenu, <7> and <9> are used to choose the items up and down. The chosen item will be in white display (white letter on a black ground). Press <#> key to fix the item setting and press <*> to cancel the item setting and return to the high-authority menu. the system will automatically escape from the menu and restore the initial interface.

Multiple choices and single choice

<7> key is to review upward, <9> key is to review downward; <#> key is to choose multiple choices or single choice; < * > key is to escape the multiple choice or single choice and save the choice result.

PIN entry - Applied to the Access PIN or Duress PIN

Press <#> at the initial state and the screen displays the prompt to enter the PWD . Enter the PWD (from <0> to <9>), and press <#> key to confirm.

PWD update - Applied to the card & PIN

Read card and press the valid PWD , then press <*> and <#> quickly, read card again at the sight of the prompt. Enter the new PWD two times. The PIN update is successful. (Default PWD is: 888888)

Chapter 2 Installation

Proper installation can ensure the normal operation. This chapter makes a detailed description of installation for smart time recorder's hardware and software.

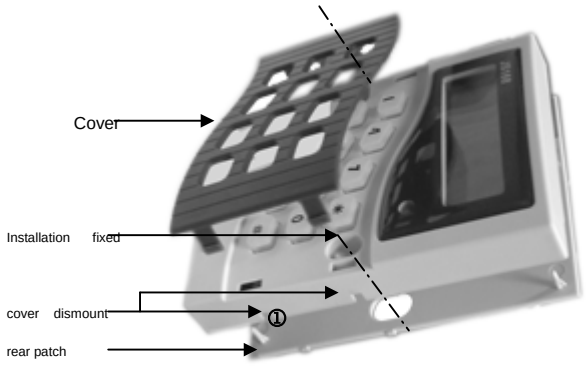
1. Package list

master controller , one piece of software CD, 5 connection lines.

The manufacturer reserves the right to make modification to the above-mentioned items without notice in advance.

2. Installation

1) assembly figure:



Note: After the equipment is on power, the system can be reset through the side cover dismount slot ①.

2) Networking with the control computer

provides RS485 networking mode. The communication distance is 1200m. It can be used for single machine or multiple-machine communication and need RS232/RS422 converter to connect with computer. See detailed connection in “Appendix A”.

2.1.1 RS485

The connection is shown as figure 2-2. It needs RS232/RS422 converter to connect RS485 port (JP1 or JP2) of time recorder. It is advisable to set the terminal resistance of 120Ω, for the long distance will results in great signal consumption.

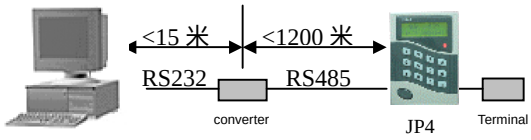


Figure 2-2 RS485 single networking

2.2 Multiple networking

The connection is shown as figure 2-3. The multiple networking realizes by the connection with one in and the other out of JP1 and JP2 (JP1 and JP2 can be exchanged). Please refer to the figure. The terminal should connect with the terminal resistance of 120Ω. And its total distance is limited to 1200m.

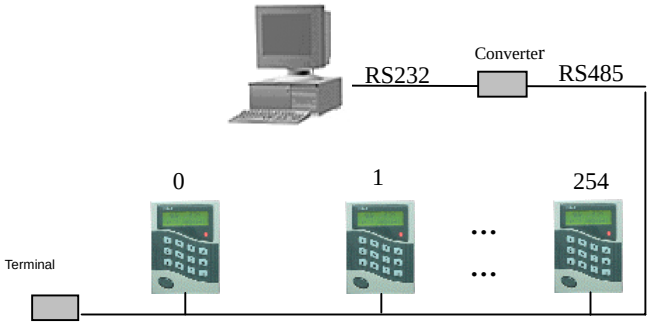


Figure 2-3 RS485 multiple networking

4) Operation

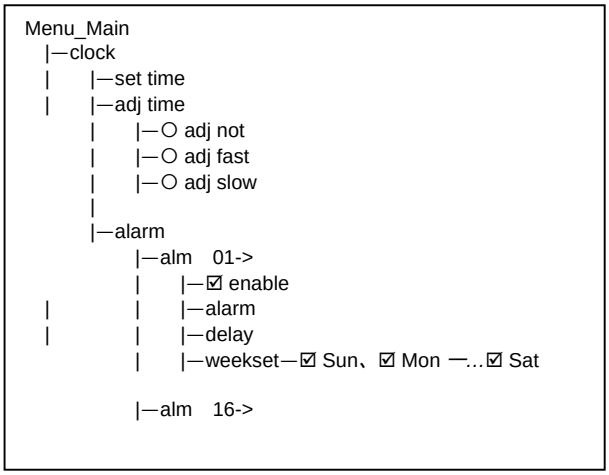
Connect the controller with power, the system will reset. The system will check after a “beep”. If the systme is normal, the screen is in the initial interface.

Note: controller won’t accept the card reading if it is menu setting or manage the computer’s continutal communication.

Chapter 3 System

This chapter mainly introduces how to set the system parameters.There two ways are valaiable: keyboard and operating control software.

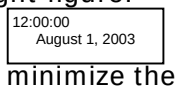
1.Clock



Set time

After a long time operation, the system's time may be incorrect. So it is necessary to adjsut the time. (the time is in 24 Hours fomat.)

The set information display is shown as the right figure.

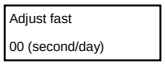


Adj time

This is used to adjust the time automatically to minimize the error after a long time operation.

○ *Adj not*——no system adjustment

○ *Adj fast*——the right figure displays after entering and then enter the adjustment value.,



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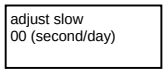
○ *Adj slow*——the right figure displays after entering and then enter the adjustmetn value.



Alarm

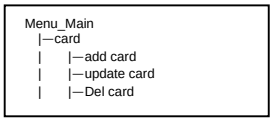
The user can set 16 alm times at most (alm 01—alm 16). Each alm time should cover following aspects:

☑ *enable —hook-like mark means starting. If not, it means closing. Press* < # > to cycle trigger.

Alm time—input alm time

Delay —the delay for alm

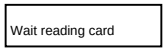
weekset-it can choose in which days it alm s.



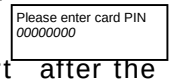
2. Card

The card includes: add, update and delete.

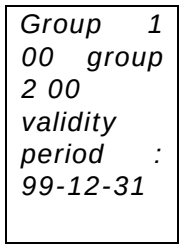
Add card: The right figure is shown after entering. To get the "card" by stamping card.



If the card to be added is not valaible at your hand, press < # > and enter the card directly. See the right figure.



The system will be in the authority distribution port after the card being acquired. See the right figure.



Group 1—corresponding to the APPset of DR 1

Group 2-- corresponding to the APPset of DR 2

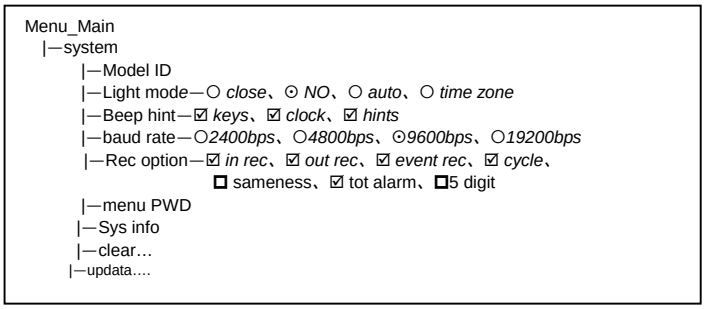
Validity period—All authority of the card is invalid after the period.

Note: the new added card's default PWD is " 888888 ". The user can update it on the keyboard. Please refer to "PWD update" part.

Update card: It is necessary to update the authority of the card having existed in the system. After entry, the operation is the same as that of the above "add card".

Delcard: to completely delete the card from the system.

3. System - To set system parameter



Model ID

In the RS485 network, each equipment has its own series number. We call this number Model ID. It support the Model ID from 0-254.

Light mode

NC—backlight—directly close

NO—backlight—directly open

Auto—Open light when button pressing and card reading. Automatically close the light when there is no such event.

time zone—Open the light in the set time zone.

Beep hint

keys---“beep” by pressing key.

alm —alm ing when alm triggers.

hints—sound when system events occur (such as: exterior reader reading card)

Baud rate

It supports four kinds of baud rate such as 2400、4800、9600 and 19200 to support RS485 networking communication.

Note: when the environmental interference and non-standard communication lines damage the communication, the baud rate should be reduced.

Record option

In rec—recing in card reading

Out rec—recing out card reading

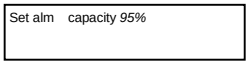
Event rec—including software open rec, PWD open rec, intrude rec, fire alm rec, button rec, duress rec, and clear rec etc.

Cycle—to cover the oldest recwhen the reccapacity is full.

No sameness-not recorde the card reading of the same card in the same site repeatedly in one minute.

capacity pre-alert--- it can trigger the alert after it being chosen.

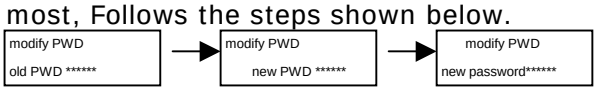
The port is shown as follow.



5-digit card number--not choose default and read the 8-digit;
choose to read the 5 digit

Menu PWD

The PIN to entering into the main menu is made up of 6 digits at most, Follows the steps shown below.

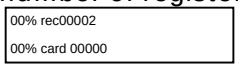


Firstly, enter the former valid PWD, then enter the new PWD two times. The PWD update is successful. To lift PWD , just to enter no number to the new PWD . When entering a number, press < * > to clear it and press < # > to confirm.

Note: It is advisable to set PWD when it is used. (the default is

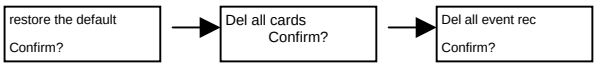
Sys info

It is used to display rec of events, the number of registered card and occupied storage volume.



Clear

It can clear the three following datas: system setting, card register and event rec.



To clear according to the actual requirement. Press <#> to confirm the clear, and press <*> to cancell the clear.

Updata

supports hardware updata on-line. The steps are shown as follow:

1. communication port connects with computer by RS485/RS232 converter.

2. When it is in the updata standby state, the operation is shown as follow: system ->updata.

Install “JS Updata tool for hardware” in the computer. Operate JS Updata.exe, communication port should choose correct interface, the baud rate is 19200, the updata file should be the xxxxx.upd updata file provided by the manufacturer. When the updata starts, progress bar indicates the course of updata. Please do not interrupt the course. After the updata, terminal computer will reboot.

```
Menu_Main
  |—door
        |—DR 1
        |      |—authority
        |      |      |—timer—(0-31)）
        |      |      |—time zone—(0-63)
        |      |      |—holiday
        |      |      |—APPSet—(0-15)
        |      |—control mode—⊙ in and out、○only in、○ any out 、○ A.P.B.
        |      |—entry mode—⊙ only card、○ only PIN、○ card &PIN
        |      |—Sensor type—⊙ sensor NO、○ sensor NC、○ fire NO、○fire NC、○ null
        |      |—button—⊙NO、○NC、○null
        |      |—open time
        |      |—close time
        |      |—first NO—⊙ ON、○ OFF              -,
        |      |—duress PIN
        |      |—access PIN
        |—set DR 2
        |      (Ditto)
        |—DR 1->2
        |—DR 2->1
```

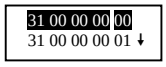
4. door

supports double-door controller

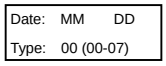
Authority

Timer—support 32 time periods. See the right figure.

Timeset—support 64 time zones. See the right figure.



Holiday—pre-set holiday authority type in one Year. See the right picture.



port 16 groups. The group mentioned in the card is set here. See detailed authority structure in Appendix B about authority description.

Control mode

In and out --in and out are strictly managed by the authority.

Only in—in is strictly managed by the authority. The out reader is invalid.

Any out--- in is strictly managed by the authority and out just reading card.

A.P.B---out by stamping card is valid only in the case of being in by stamping card.

Entry mode

Card only ---verify the card's authority.

PIN only---in by entering valid access PIN or duress PIN.

Card & PIN—verify the card's authority and enter valid PWD.

Sensor type

Sensor NO—signal is in short circuit to the ground, which indicates there is sensor signal. And the door opens.

Door NC—signal is in open circuit to the ground, which indicates there is door switch. And the door opens.

Fire NO—signal is in short circuit to the ground, which indicates there is fire signal. And it triggers the fire alm .

Fire NC—signal is in open circuit to the ground, which indicates there is fire signal. And it triggers the fire alm .

Null----the signal is invalid.

Button

NO—signal is in short circuit to the ground, which indicates the button is pressed.

NC---signal is in open circuit to the ground, which indicates the button is pressed.

Null---signal is invalid.

Open time

It is the duration of unlocking when going in normally. If the open signal of sensor is founded during the time, the controller will close the lock at once. Otherwise, the controller will close the lock till the open time.

Close time

It is the time from door open to close. In another word, the time from system detecting open signal to close signal is called close time. If the close time is over the set value, the system will alm to warn the user to close door.

Note: the above funtion is only available for door with sensor.

First NO

Within the set control time of first group, if there is a normal and valid open, the door will keep open till the controltime is up. For example, the gate setting in the factory, it opens during working time and closes after work.

Duress PIN

When the seized by burglar, the user can press the PWD to open door. And the system will keep a duress event rec the monitor computer will display the rec. If the setting is empty, the PWD is invalid.

Access PIN

The PWD is used to open door directly. If the setting is empty, the PWD is invalid.

Set DR 2

The operation is the same as the above.

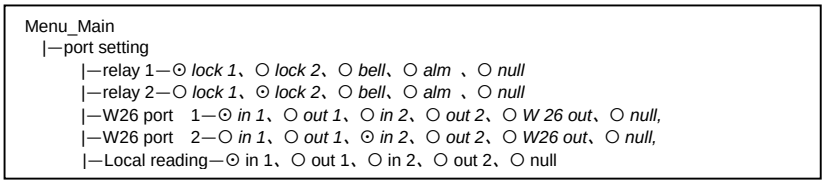
DR 1->2

Copy all setting of DR 1 to the DR 2.

DR 2->1

Copy all setting of DR 2 to the DR 1.

5. Port



The user can properly configurate the interfaces (relay, W26 port and reader of the machine)provided by the system according to their own application demand.

Relay 1

Lock 1---- linking with electric lock control of DR 1

lock 2—linking with electric lock control of DR 2

bell--- linking with alm control of alm

alm ---link with alm event (such as illegal intrude etc)

Null---signal is invalid.

relay 2: ditto

W26 port 1

In 1---the port connects with standard W26 reader and controls in of DR 1.

Out 1---the port connects with standard W26 reader and controls out of DR 1.

In 2---the port connects with standard W26 reader and controls in of DR 2.

Out 2---the port connects with standard W26 reader and controls out of DR 2.

W26 out---the card reading employs standard W26 out. Therefore, it can be used as reader.

Null---signal is invalid.

W26 port 2

Ditto

Self reader

It is the same as W26 port 1, 2 except for the W26 output.

6. Language

Menu-Main
|—Language—⊙ *Chinese*、○English

Chinese and English are optional.

7. Short message

The user can send some short word message (100 Chinese characters or 200 English letters) to the LCD screen , such as: notice the company and advertisement etc. The system displays the message on the screen. If it isn't displayed in one line, it is be displayed in roll. The message has two kinds: public message and personal message. The public message will automatically display on the screen if the sending time is valid. While, the personal message is only displayed after the designated card is stamped.

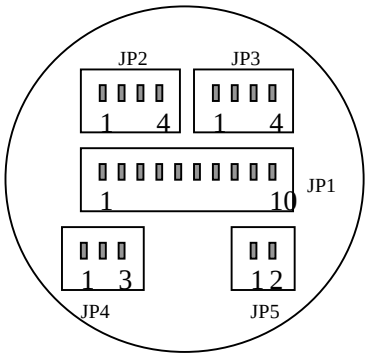
Note: The short message is only sent by the controlcomputer.

8. Name and work number

The name and work number of employee is sent to the time recer by the controlcomputer. The name is made up of 8 English letters or 4 Chinese characters at most, and the number is made up of 11 English letters and digits at most.

Note: The name and number can be only sent by the control computer.

Appendix A Port and extended signal



Description for JP1 port signal

Terminal	Signal	Color	Remark
1	+V	red	Positive power terminal (+12DCV)
2	GND	black	Power ground
3	MC1	green	Sensor 1
4	OP1	yellow	Button 1
5	MC2	white	Sensor 2
6	OP2	brown	Button 2
7	LS1	blue	Relay output 1
8	LS1	purple	
9	LS2	orange	Relay output 2
10	LS2	gray	

Description for JP2, JP3 port signal

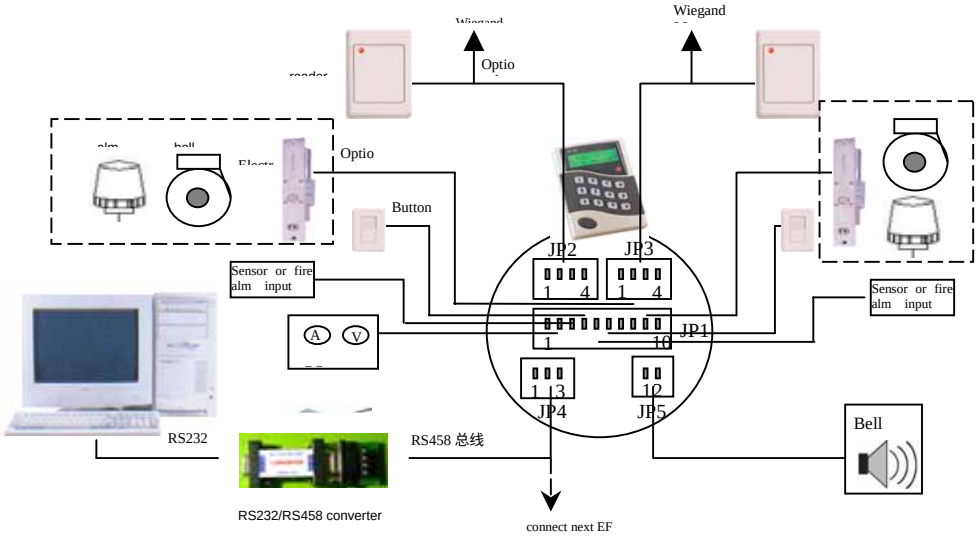
Terminal	Signal	Color	Remark
1	+V	red	Positive power terminal
2	GND	black	Power ground
3	DATA0	green	W26 data line
4	DATA1	yellow	W26 data line

Description for JP4 port signal

Terminal	Signal	Color	Remark
1	GND	black	Power ground
2	RS485-	green	Negative RS485 communication
3	RS485+	yellow	Positive RS485 communication

Description for JP5 port signal

Terminal	Signal	Color	Remark
1	GND	white	bell switch signal (NO)
2	Bell	gray	

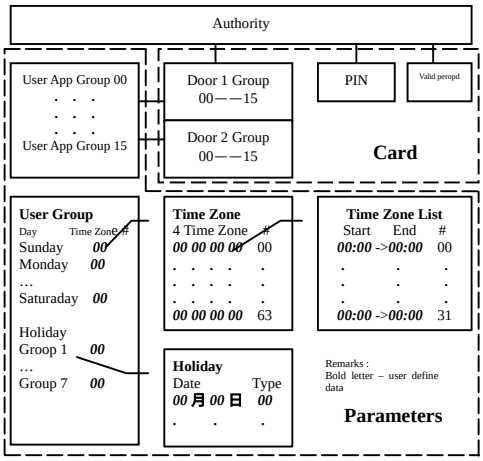


Appendix B authority description

Setting steps:

1. Set timer>> set Time zone>> set holiday >> set APPset 00-15.

2. Card -> add card or update card, set the validity period of the card and distribute corresponding APPset to the two doors.



Example setting

e.g 1

24 hrs

User App group	Time Zone	Time slot
Set all 00	00 00 00 00 00	00:00 ->23:59 00

E.g 2

Monday —— Friday ：

8:00——12:00 14:00——17:00 20:00——23:30 (3 time slot can entry)

Saturday - 12:00 can entry only

Sunday & Holiday ：All day can't entry

User app Group	Time Zone	Time slot
Sunday 00	00 00 00 00 00	00:00 ->00:00 00
Monday 01	01 02 03 00 01	08:00 ->12:00 01
Tuesday 01	01 00 00 00 02	14:00 ->17:00 02
Wednesday 01		20:00 ->23:30 03
Thursday 01		
Friday 01		
Saturday 02		
Holiday0 00		

Holiday	
Date	Type
10 月 01 日	00

Appendix C A.P.B description

Requirement 1. The one who enters by reading card is permitted be out by reading card.

Setting steps

1. Port ->W26 port 1 (set as in 1)
   ->W26 port 2 (set as out 1)
2. DR 1 -> control mode (set as A.P.B)

Requirement 2. There is one entry and one exit in one parking lot. The card reading is necessary when entering and going out the lot. But the vehicle that isn't registered by card reading in the entry is forbidden to park in the lot.

Setting steps:

1. Port -> W26 port (set as in 1)
   -> W26 port 2 (set in 2)
2. DR 1 -> control mode (set as A.P.B)
3. Set DR 2 -> control mode (set as A.P.B)