iFace Series Installation Guide

Version：1.2.1
Date：Oct. 2010
Applicable Models**:** iFace201, iFace202, iFace301, iFace302, iFace401, iFace402

About this Guide

This guide provides actual installation instructions only. For information regarding user instructions, please refer to "iFace Series User Manual".

Important Claim

Firstly thank you for purchasing this face and fingerprint hybrid terminal, before use, please read this manual carefully to avoid the unnecessary damage! The company reminds you that the proper user will improve the use affect and authentication speed.

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Content

1 System Configuration

1.1. Notice about installing

This product a mass-produced product. It strictly follows to the criteria of manufacture and inspection of China, U.S.A, and EU. This file contains important information. It is better for you to read it carefully prior to use. If you ignore it, the incorrect installation may cause the unit damage. Although we could do our best to offer you service, the neglect to the file could cause unwanted cost for you.

1. Before installation, please make sure the power is cut off, because   it is very dangerous if the power is on. The short-circuit of power cable may cause the core parts damage.

2. All exposed part of connection wire end can not be exceeded 5mm to prevent the bared wire accidental connection which leads to machine break down. And also suggest using different colour cable to connect.

3. In the place where the static is strong or in winter, please connect the grounding firstly, in order to prevent the instant mass static damage the machine.

4. Connect power supply with device in the last for the wiring connection. If you find any unusual thing occur, please firstly cut off the power, then go to examine. Keep in mind: wiring operation under power on will lead to machine sudden damage; we are not liable for damages and trouble due to such

operation.

5. After installation finish, when go to test the exit-door button, please keep a personal in the outside, because sometimes the accidental issue can bring on you are not able to go outside.

6. Our equipment offer an automatically function, please after the installing finish. Run the auto-test function to confirm the installation finish .

7. We recommend using above the 12V/3A direct-current supply for access control device,   electricity lock better to powered by 12VDC, and no more than 1.5 A electric current   At this time, the electric current of supply should be above1A than lock power. If the parameter of lock power surpasses this scope, please connect technical personnel. If the power had not met above requests, it possibly causes to be unable normally to drive the electricity lock, even damage the device.

8. Before device to be connected please read and always follow "Quick connect Guide" closely. Because the wrong wiring will cause the core block and sensor to burn out, insult in device to break down, at this cause we are not liable for any damages and trouble.

9. If the space between power adapters and device is too long, please do not use the twisted-pair or other type ferrules for the power wire. When the power wire is choused, you should consider attenuation of voltage which has passed long distance transfer.

10. Please use specialized RS485 cable and the RS232/485 converter with power to hookup the network, the bus structure apply to connect with each device. When a long cable is used to transfer signal, it is need to connect a matching resistance to

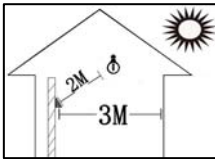receiver, and its value is 120Ω.

For other matters not covered in detail herein, please refer to the *User Manual*, *Software Instructions*, and appendixes related to this equipment.

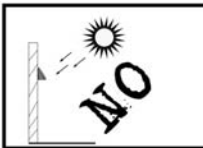## 1.2. Installation Environment

Recommended location:
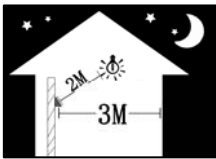
Install the iFace indoors at least 10 feet (3m) away from windows, and 6.5 feet (2m) away from light fixtures. Preferable light intensity should range between 0-800 LUX.
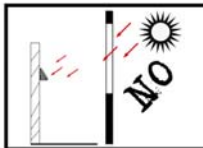
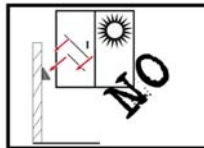| 10Lux	1200+ Lux	0-800Lux

NOT Recommended locations:

Direct sunlight Outdoors	Direct sunlight thru window	Indirect sunlight thru window	Too close to light fixtures
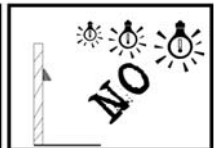
1.3 View of operation panel

Front view

LED light

TFT touch screen

Fingerprint Sensor

Baseline

Integrated   RF   Card
Module Read Section

Touch Keypad

Camera

Side view

Power key

Reset key

USB

Back view

- Battery slot
- Power
- TCP/IP
- USB
- connection terminal
- Loudspeaker
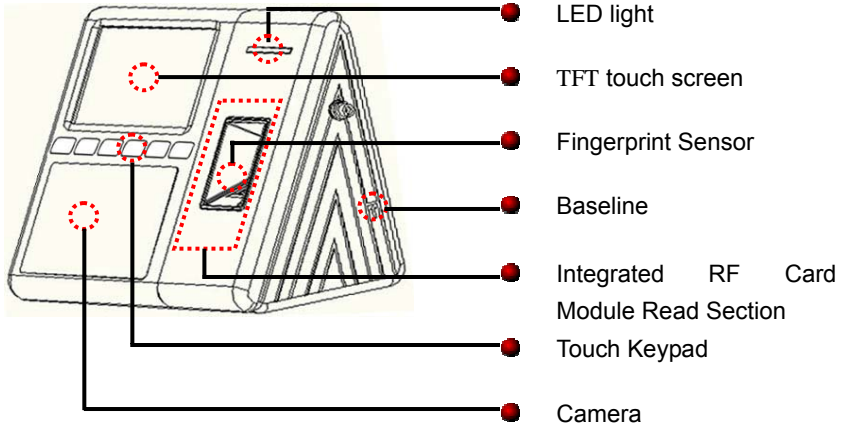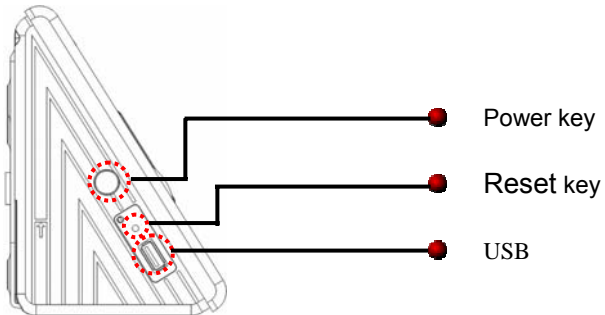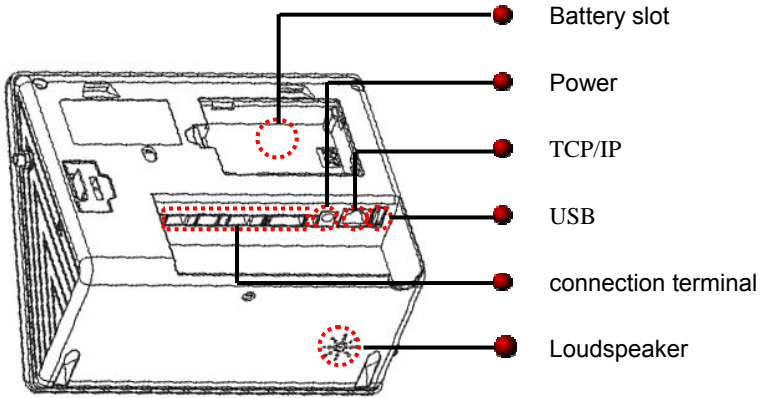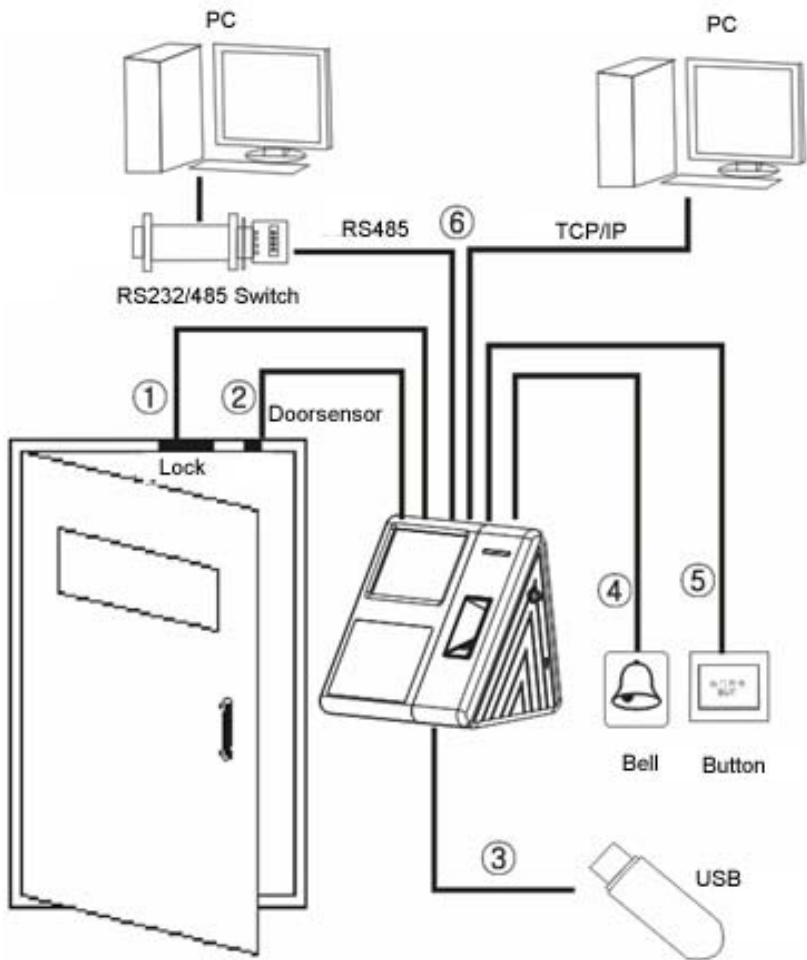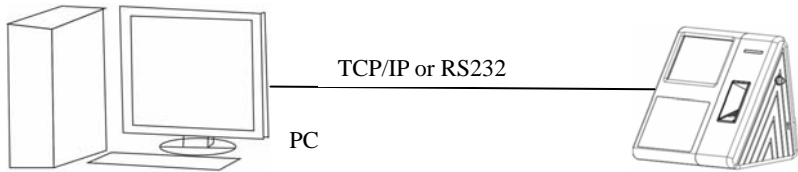
2 The illustration of system construction

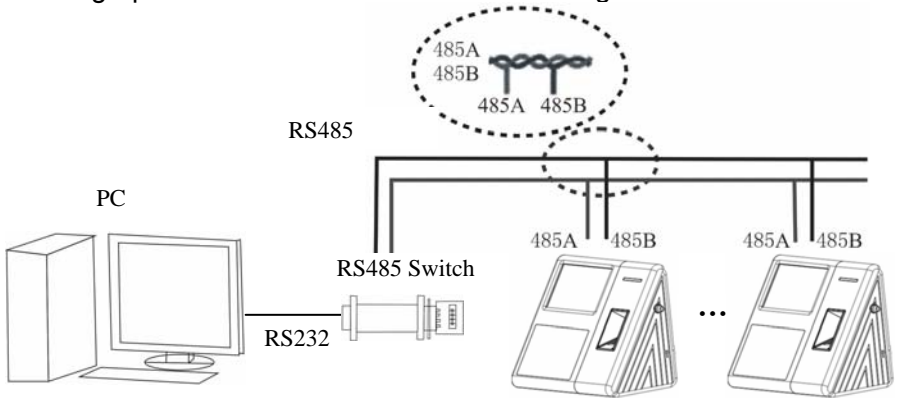## 2.1 The illustration of system construction
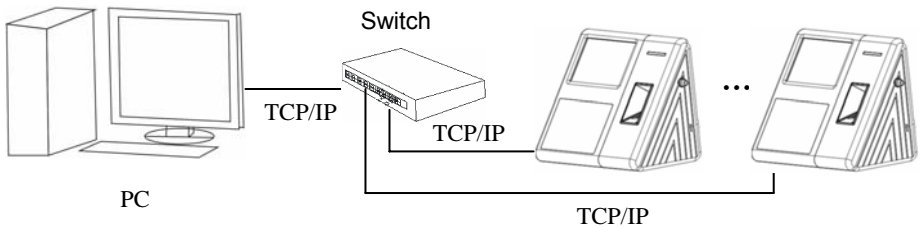
2.2 The sketch map of communication

1 Fingerprint machine directly connects with PC through RS232 or TCP/IP.

2 Fingerprint machine connects with PC through RS485 network.

3 Fingerprint machine connects with PC through TCP/IP network.

3 Installation

3.1. Installation Steps

1. Affix the paper template to the wall and drill holes within the three marked circles on the paper template.

We recommend affixing the template about four (4) feet (1.2m) above the ground, assuming the average height of your users is 5-6 feet tall(1.5m-1.85m).
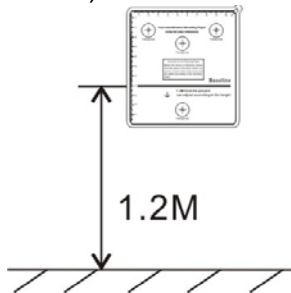
2.Now affix the mounting plate on the wall by drilling three (3) screws into the three (3) circles marked on the paper template.

3. After installing the back cover, ensure it will be stable, solid and non-loosening.

3.2 Conect with other devices

Caution: Do not to connect peripheral equipment before the power of the device is cut down, otherwise it is possible to damage the device badly.

Please follow instruction to connect peripheral equipment。

① Door sensor connection (Sensor, GND)

② Exit-button connection (Button ,GND)

③ Alarm connection (NC2,COM2,NO2)

④ Door lock connection (NC1,COM1,NO1)

⑤ Ethernet connection (RJ45-1, RJ45-2, RJ45-3,RJ45-6)

⑥ RS232 connection (232T,232R,GND)

⑦ RS485 connection (485A,485B)

⑧ Wiegand output connection (WD0,WD1,GND)

⑨ Power connection (+12V,GND)

Power   TCP/IP   USB
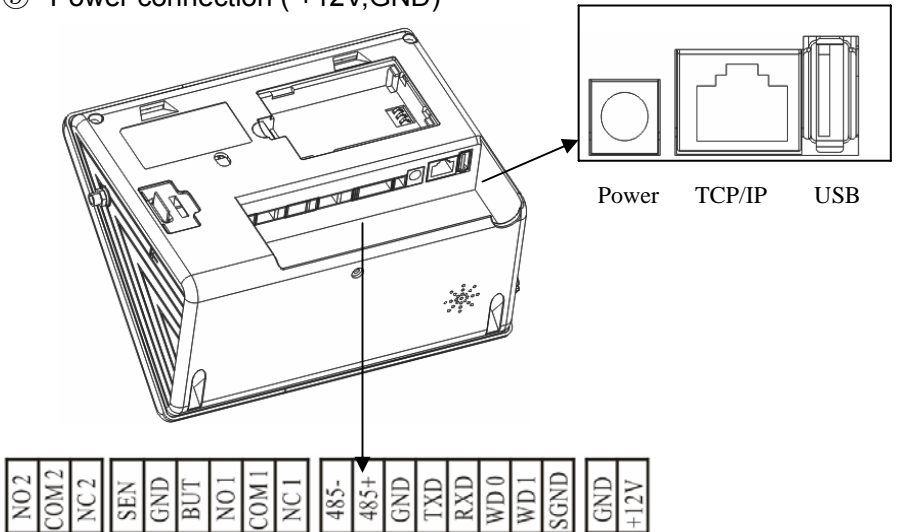
The definition of terminal connection ：

From left to right			
1	NO2	Connect to Cable Bell	Tie up together
2	COM2		
3	NC2		
4	Sensor	Connect to Door sensor	Tie up together
5	GND	For Door sensor and release button	
6	Button	Connect to Release button	
7	NO1	Connect to Lock	Tie up together
8	COM1		
9	NC1		
10	485-	RS485 communication	Tie up together
11	485+		
12	GND	Connect to RS232　and Wiegand GND	Tie up together
13	TXD	RS232 communication	
14	RXD		
15	WD0	Wiegand out communication	Tie up together
16	WD1		
17	SGND	Connect to screen wire	
18	GND	Connect to Power GND	Tie up together
19	+12V	Connect to Power +12v	

3.2.1 Door sensor connection

The door sensor is used to detect the door open-close state , terminal can monitor if the door has been unauthorized open through the door sensor, at this time it can output a alarm signal, moreover, terminal can trigger prompt warning if the door is not close tightly.

3.2.2 Exit-button connection

The exit-button is installed for in-door operation. When the switch of the button is close, the door will open. The distance is approximately 1400mm from ground to exit-button bottom. Make sure that the exit-button position is to align correct, upright and the connection is accurate and reliable. (Unused exposed end of cable should be cut off, and use insulating tape to wrap it.)Pay attention to electromagnetic disturbance. (For example: The light switch, the computer and so on)
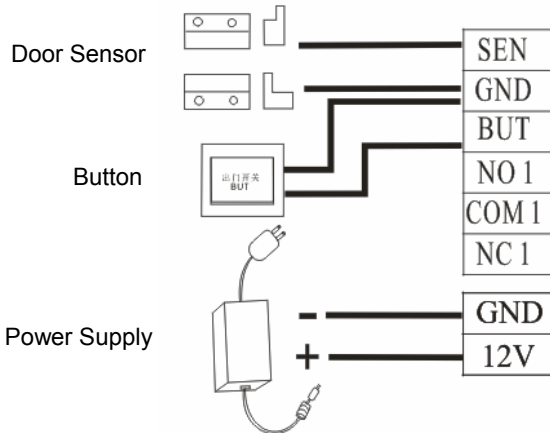
3.2.3 Time Ring connection

Connect the electrical bell to the fingerprint machine, when arrive the appoint time, the fingerprint machine will send signal to trigger relay。The terminal supports both Normal-Open bells and Normal-Close bells at the same time.

①Normal-Open bells

iFace

NO 2
COM 2
NC 2

Bell

Power supply

②Normal-Close bells

Bell

iFace

NO 2
COM 2
NC 2

Power supply
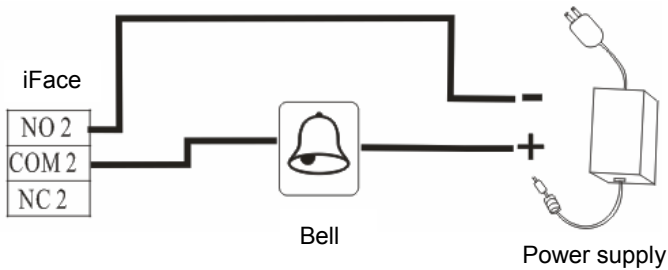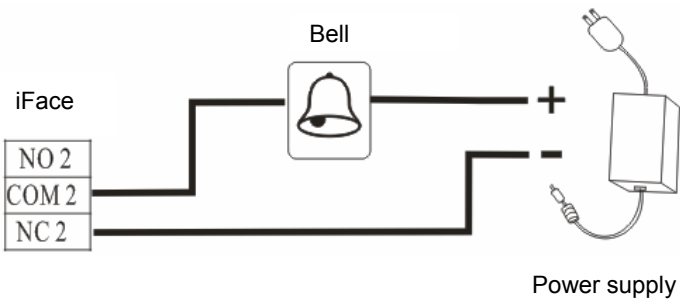
3.2.4 Door lock connection

The way of installing door lock depends on the type of lock and local condition. Internal resistor which comes from long distance transfer should be taken into consideration when selecting the cable of electric power. The door lock should be installed reliable and stable .Ensure the wiring is correct. For the strike lock and electromagnetic lock, you should pay attention to positive and negative terminal connection. The unused bare end of wire should be cut off and use insulating tape to wrap it. The delay time of strike lock is adjustable according to different conditions.

● **When the Access Control System connected with Electric lock, to prevent the self-inductance EMF to affect the access control system, you need to parallel one FR107 diode (do not reverse the polarity) . Please use the equipped diode in the package.**

Select electric lock ：it is better to use strike lock for the two –direction opening glass door (both open to inside or outside direction) ,for the single opening wood door in company internal , we recommend to use magnetic lock, the magnetic lock also be called as electric magnetic lock,. The magnetic lock is more reliable than the strike lock, but the strike lock is much safer than the magnetic lock. In the small living community, it is better to use strike lock and magnetic force lock. The electric control lock gives out higher noise; the electric control lock is commonly used to building communication. Now there is a soundless electric control lock which is able to be applied. Please pay attention, the lock is made of iron and easy rust, so you must beware of not exposing it

to water or harsh condition, there are some other electric locks available, we don't recommend you to use them.

Connect with electric lock

The Normal-Open lock is open when the power is on. The Normal-Close lock is closed when power is on. The machine supports both of the two kinds of locks at the same time. The way of lock connection changes with the type of lock. For NO lock, the NO terminal will be used; for NC lock, the NC terminal will be used.

This access control machine is powered by DC12V and work current 400mA. If the lock work electric power is DC12V and the work current is less than 1000mA, the fingerprint machine and lock are able to be powered by one adapter together, please refer to table 1, 2.

In the following three cases, we recommend that fingerprint machine and lock are powered separately.

1)The working voltage of the lock is DC12V, but the current difference of the fingerprint machine and the lock doesn't exceed 1A.

2) The lock voltage is not DC12V.

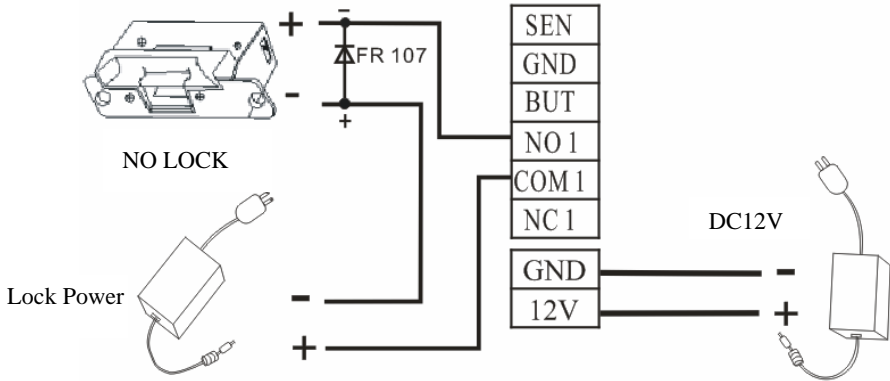3) The distance between lock and fingerprint machine is too far.
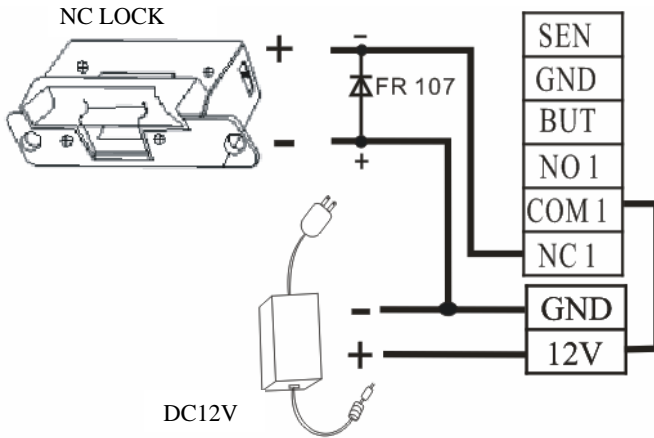
Picture1 Power by one supply
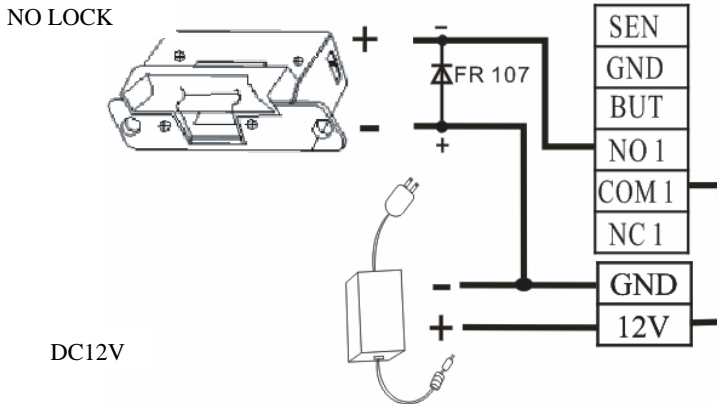
Picture2 power by one supply

15
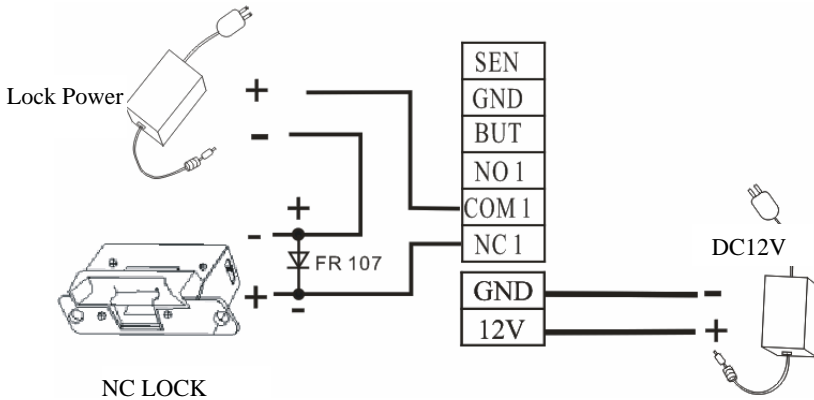
Picture 3 The terminal and lock powered by independent adapters

Picture 4 The terminal and lock powered by independent adapters

Note: Please use the diode FR107 delivered with the equipment as the diode indicated in the figure above. Be careful not to reverse its polarity.
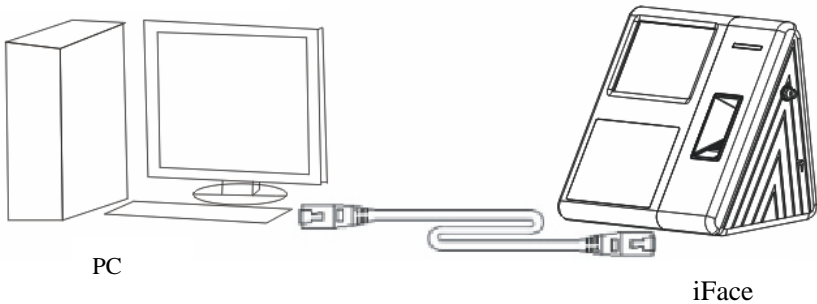
3.2.5 Ethernet connection

The background PC software can communicate with device via TCP/IP communication method to exchange data and remotely manage.

The terminal provide two ways connect Ethernet.
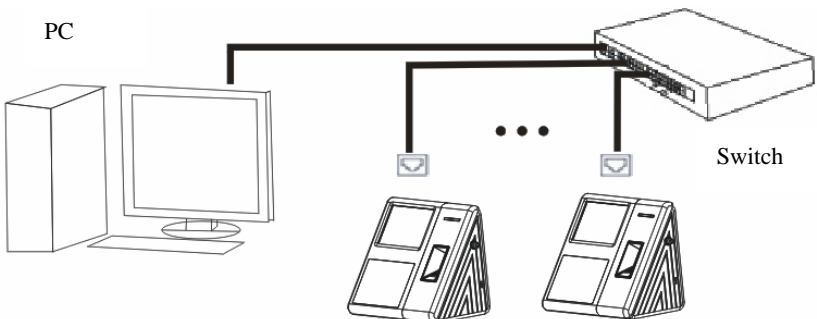
1）The terminal connect with PC through cross cable。

IP：192.168.1.100
Sub Mask：255.255.255.0

IP：192.168.1.101
Mask：255.255.255.0

PC

iFace

2）The terminal connect with PC through network and HUB to create a local network。
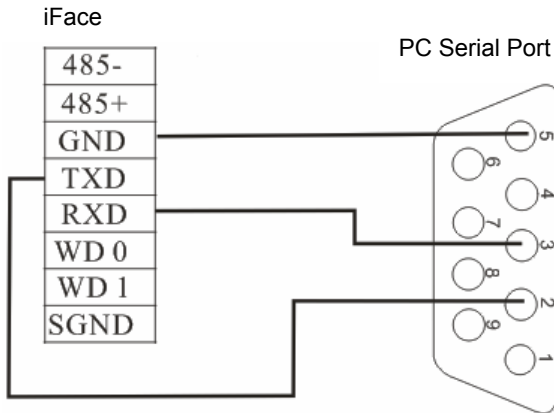
PC

Switch

3.2.6 RS232 connection

The background software can communicate with the equipment to upload and download records by the RS232 communication means.

Terminal connection definition

PC Serial Port	iFace
RXD	TXD
TXD	RXD
GND	GND

Note：Don't upload or download facial module through RS232, because the large data will effect the transfer speed.

3.2.7 RS485 connection

When the RS485 is used for networking, the bus network architecture must be used for wiring. Any RS485 communication line consists of a group of twisted pairs, and signal is transferred with the help of the voltage difference between two communication lines. However, differential interference will arise between the two signal lines when signal is being transferred. To eliminate differential interference, add a bias resistor (terminal matching resistor) to the circuit. It is unnecessary to add any terminal resistor in general, except that the RS485 communication distance is over 100 meters. In this case, terminal matching resistors must be added to the terminal devices at both the start and end of the RS485 bus.

Terminal connection definition

Terminal	Function
485+	RS-485 communication +
485-	RS-485 communication -

Note：Don't upload or download facial module through RS485 because the large data will effect the transfer speed.
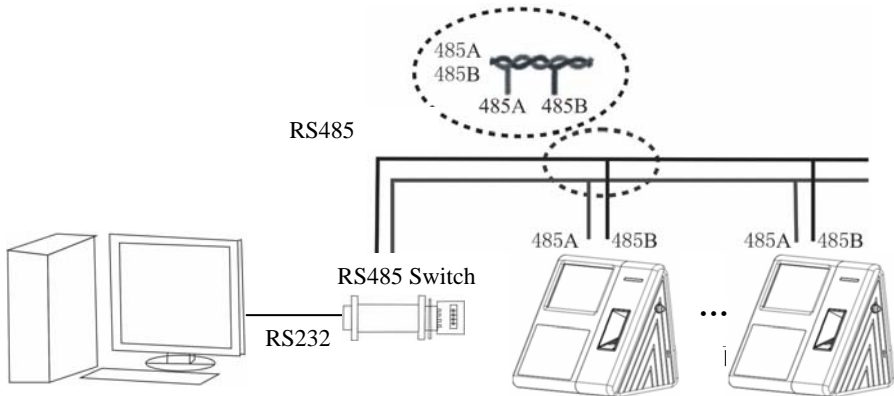
3.2.8 Wiegand Output Connection

The equipment provides standard Wiegand26 output, which can be connected to most of the current access controller, in the same way as connecting an IC reader or a password keyboard. Generally, it is preferable to limit the length of any connection line to an access controller within 90 meters. (A Wiegan signal extender can be used for a longer transmission distance or a place with strong interference.)

Note：

1）The distance between device and access controller or card reader shouldn't be over 90 meters (If a longer distance is needed or there is interference in using environment, please use Wiegand signal de lay.).

2) To ensure the stability of the Wiegand signal, the device must share the GND with controller or Wiegand reader.

3) If the distance of Wiegand output or 485 communication is over 90 meters, in order to reduce the interference caused by the long distance, it is suggested to use the cable with shield and connect the shield cable to the SGND terminal.
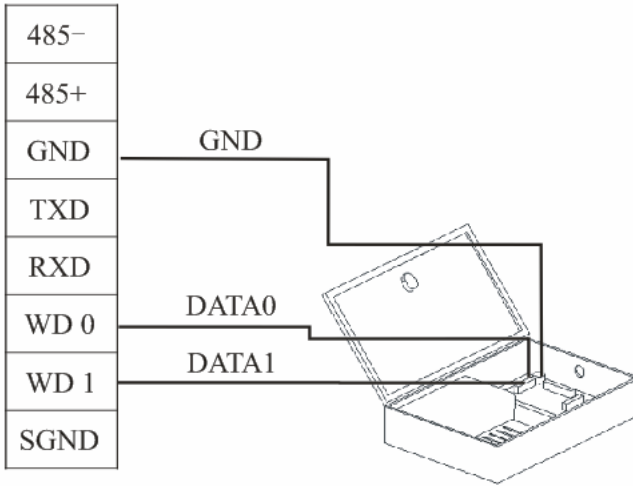
3.2.9 Power Connection

The device's working voltage is DC12V,， with working current 500mA, standby current 50mA has provided two ways to connect power, please select one referring to the actual.

1．Terminal connection, Make sure the connection as the Diagram (**Don't connect the poles in reverse.**).

2．Slot connection: Insert the plug of DC12V adapter into the power slot directly.
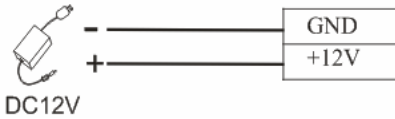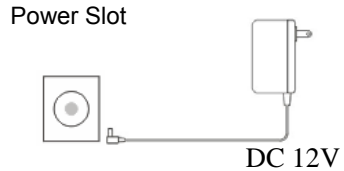
Terminal connection   Slot connection

3.3 Fix the device

1. Ensure to plug all the patch correctly?
2. Hang the iFace on the mounting plate (top side first). Please see figure ①.
3. Then secure the iFace to the mounting plate with a screw from below. Please see figure ②.
4. After installing the back cover, ensure it will be stable, solid and non-loosening.

①   ②
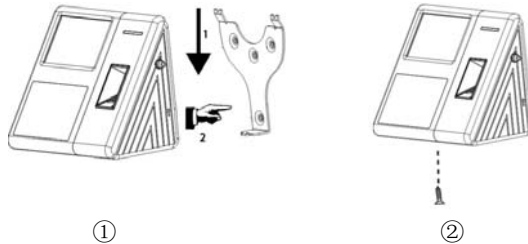
4 Check after Installation

Upon completion of installation of the whole system, check whether the installation is correct before power-on. Check whether the lock drive and other devices can work normally. For more information, please see the *User Manual* and *Software Instructions*.

1) Upon power-on, the indicator begins to blank in green.

2) Enter **Menu** -> **Auto Check**.

3) Enter **Menu** -> **User Management** -> **Add User** -> **Register Face** to register a face template. Test the access controller and its lock through face verification.

4) Delete the registered face template if there is no problem.

5. Others

5.1 Reset

Due to operation error or other accidence, which leads the machine not to work, you can restart machine through reset key。

① take a small tool which diameter is no more than 2mm。

② find reset mark of "res" on the left small hole on the bottom of device, see following figure。

③Use the tool plug into the hole refer to the picture on right , then plug out. The machine is able to restar。

Reset
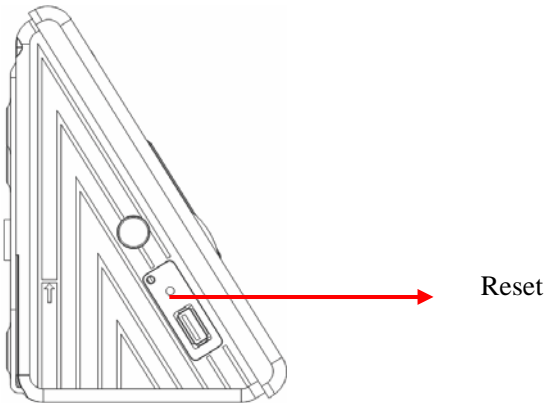
5.2 Anti-dismantle button

Anti-dismantle button is on middle of device, whose function is realized by back-cover pressing the anti-dismantle button. When the device is being dismantled, it will send a alarm signal through the terminal.

Anti-dismantle button
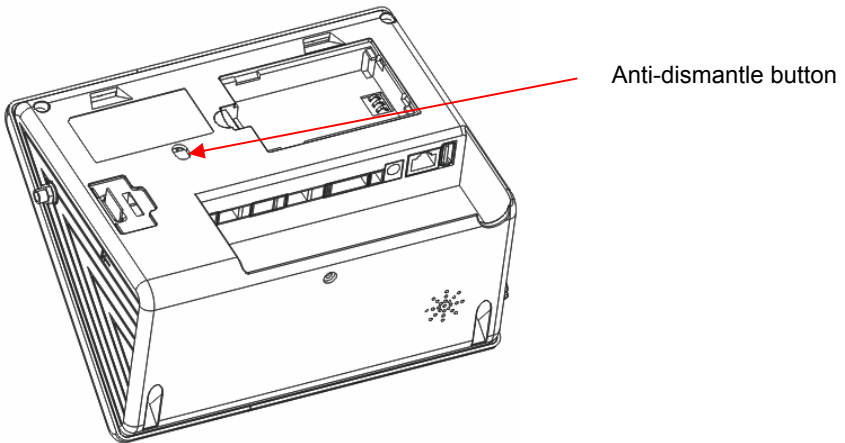
5.3 U flash disk using

① there is a mini-port of USB, please see figure circle on the left。

② USB can be used to upload and download data by U disk,。

USB Port
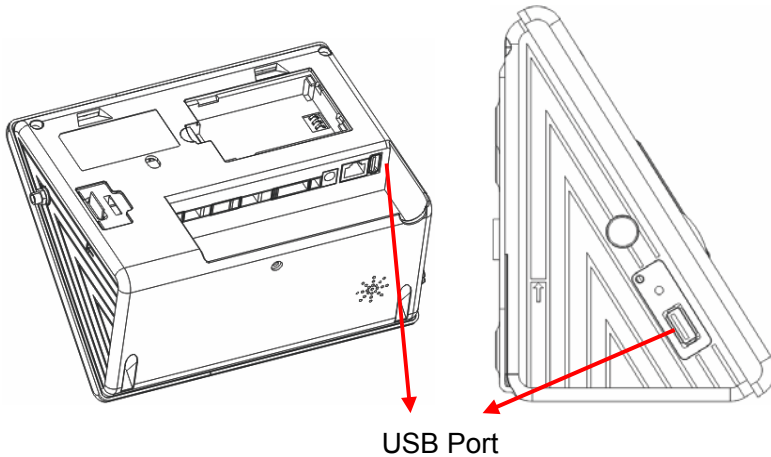
5.4 Reserve Battery

Work principle

Before use, make sure the reserve battery is installed properly. Whenever use power supply or reserve battery, you need press power key to turn on the terminal. In normal state, When the power cut down, the reserve battery will switch into discharge state to power on the terminal, In power off state, when the power cut down, the reserve battery will not switch into discharge state to power on .If you want to power on the terminal , you need press power key to turn on the terminal.

Battery slot

Power key
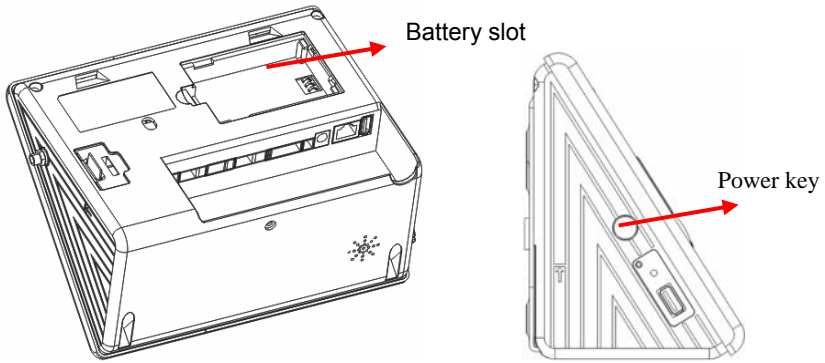
Technical parameter：

Charge time	Less than 4 H	Discharge time	More then 5.5 H
Working environment	0℃～50℃	Relative humidity	10％～90％
Storing environment	Please store the battery when the discharge capacity is full.,and the environment is 20℃±5℃。		
Cycle age	Cycle times of charge and discharge≥300 times		

Notice：

There is a danger of battery exploding, leak, fever, fire, break, if you don't read the notice carefully.

⚠ Do Not use it over 50℃；

⚠ Do Not inverse polarity connection；

⚠ Do Not put the battery into water or let it to get wet；

⚠ Do Not use and store battery near heat-generating machine (such as fire or heater)；

⚠ Do Not throw batteries into fire or hot battery；

⚠ Do Not use wire or other metal short the positive and negative terminal.