

PFCV4905 Product User Manual



Document Instructions

This document is mainly composed of the following parts:

- Chapters 1 to 3: Provide an overall introduction to the product, including product features, appearance, parameters, interface leads, and installation methods.
- Chapter 4: Introduce several working modes of the device to help users fully understand the device authentication process.
- Chapter 5: Explain how to log in to the device's background.
- Chapter 6: Since there are relatively many background settings, this chapter lists the setting methods for several common scenarios. This allows users to quickly configure the device after getting it.
- Chapter 7: Provide a detailed introduction to the functions and usage of the face device configuration tool.
- Chapter 8: Elaborate on the configuration options and operation instructions of the face device's background.
- Chapter 9: Include precautions for device registration, installation, and use.

Users can quickly master the device usage method according to the guidance provided.

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1. Preface

Thank you for choosing to use the PFCV4905 face recognition, temperature measurement, QR code scanning, and card - swiping all - in - one device. Reading this manual carefully can help you understand the functions, features, installation, and operation methods of this device.

1.1. Product Introduction

The PFCV4905 integrates face recognition, temperature measurement, card - swiping, QR code reading, and ID card reading functions. It supports four communication methods: RS485, Wiegand, Ethernet, and WiFi (with 4G expandability). Both card - swiping and QR code reading can be configured to output data in these formats. After a successful card - swipe or QR code recognition, the device directly outputs the data in plain text without local verification. For face recognition, the verification is done locally, and the face database is stored on the device. Once the verification is successful, the personnel ID can be output, and the output method can be selected from the four available communication methods.

This product features an 8 - inch touch - screen, voice broadcast, and a built - in microphone, ensuring good interactivity and user - friendliness.

The PFCV4905 device supports the protocol mode. Users can conduct secondary development based on the "Communication Protocol" provided by our company.

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1.2. Product Features

- Integration of face recognition, card - swiping, and QR code reading functions.
- Equipped with an 8 - inch high - brightness LCD touch - screen, real - person voice broadcast prompts, and a 2 - megapixel binocular camera.
- Achieves an identification accuracy of over 97% when the database is full, with an identification time of less than 0.3 seconds per person.
- Has an identification distance ranging from 0.3m to 1.5m. It can support a maximum of 50,000 - person face database, 50,000 cards/QR codes, and 50,000 records.
- Can effectively identify people wearing masks, glasses, or hats, and supports mask detection.
- Built - in silent liveness detection can effectively prevent attacks from photos, videos, and masks.
- Supports TCP/IP, MQTT, and HTTP protocols.
- Supports configuration and registration via QR code scanning.
- Has external alarm input, door magnetic status input, and exit switch input.
- RS485 and Wiegand can output face ID numbers, QR code content, or card ID numbers.

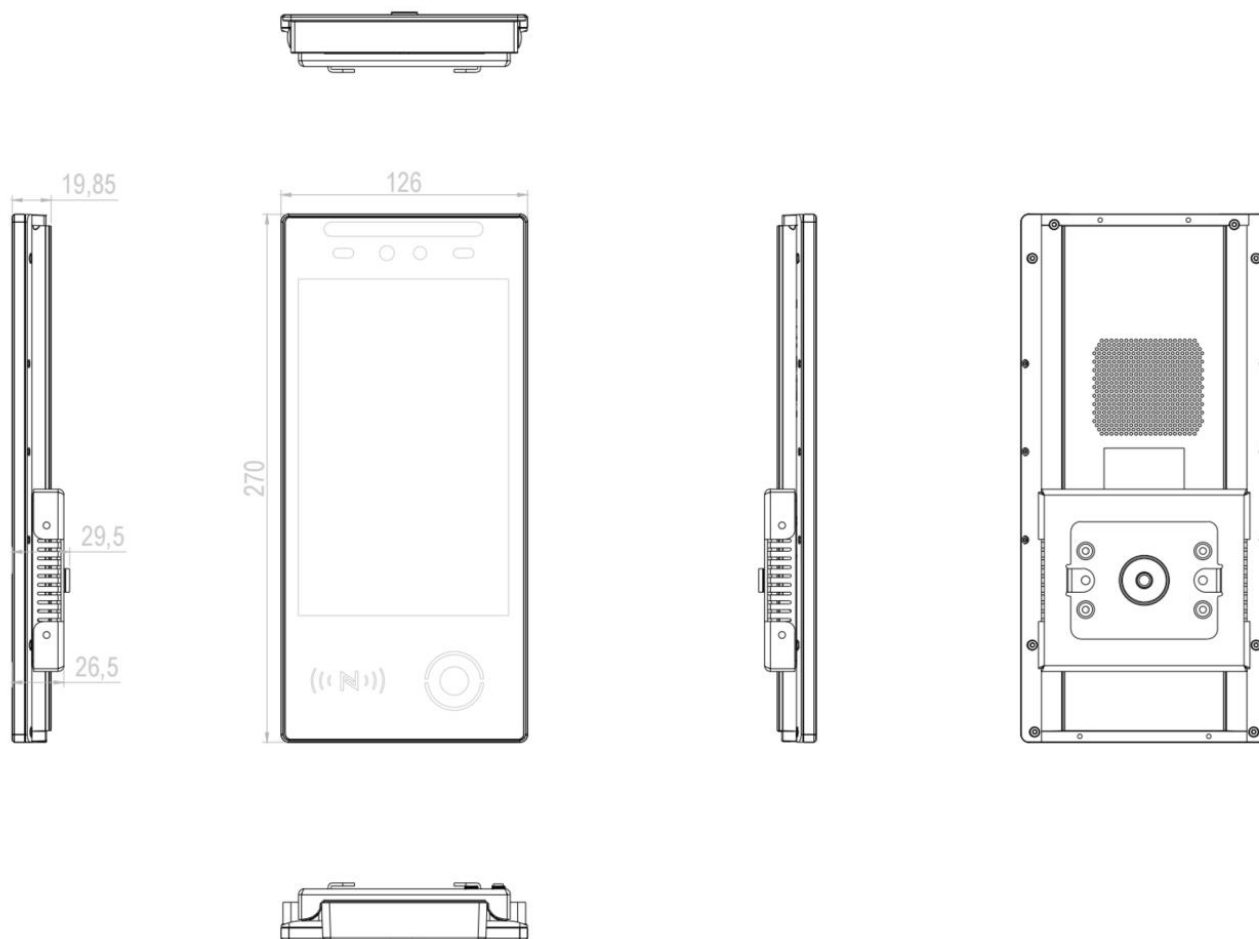
- Built - in high - precision clock chip and RTC battery to maintain time even during power outages.
- Electrostatic protection: 8KV contact, 12KV air.
- The dust - proof and waterproof level of the non - 4G and non - temperature - measuring module face device can reach IP66.
- Supports logo customization, protocol customization, and OEM services.
- Supports installation on turnstiles, 86 - box, flat walls, and columns.

2. Product Appearance

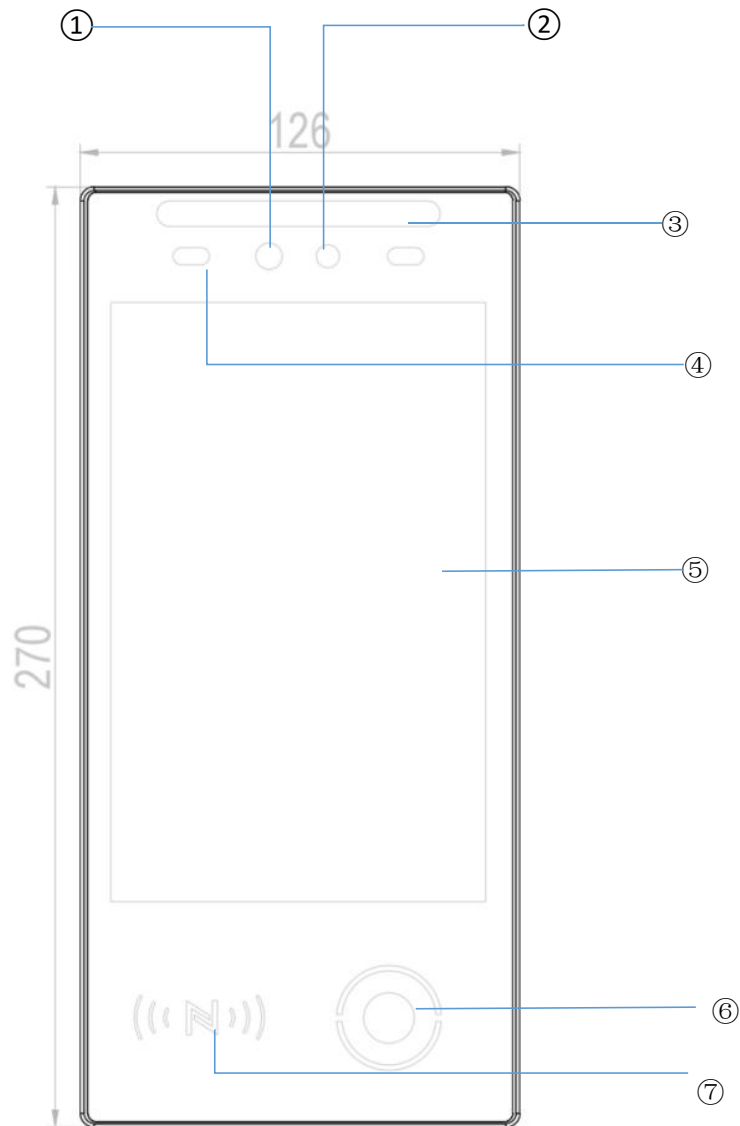
2.1. Appearance Diagram



2.2. Dimension Diagram

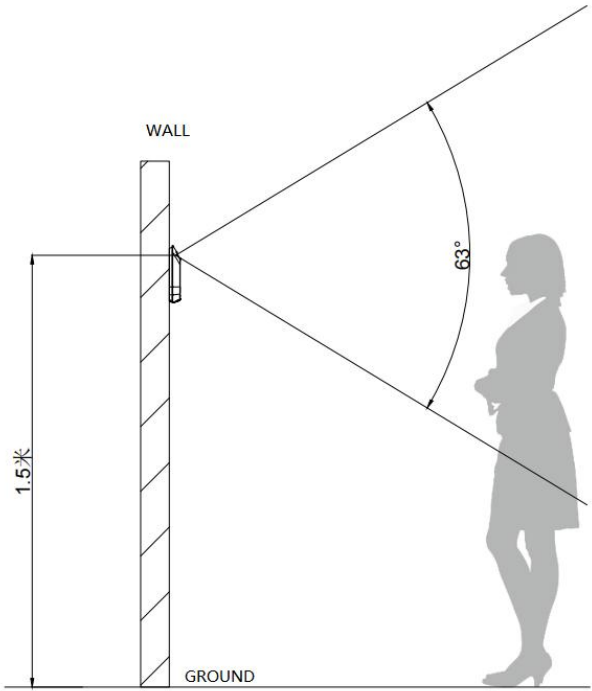


2.3. Appearance Introduction

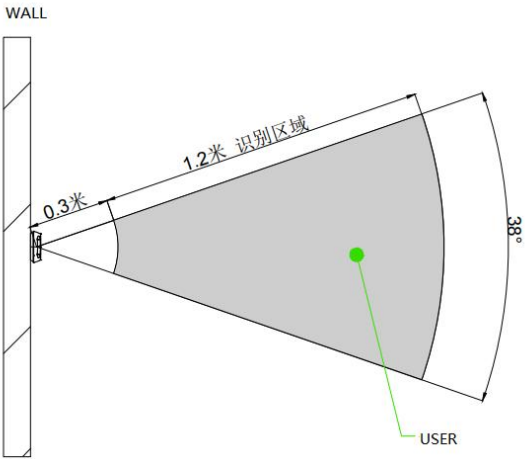


Number	Name
①	Infrared Camera
②	RGB Camera
③	White Fill Light
④	Infrared Fill Light
⑤	8 - inch High - brightness LCD Touch - screen
⑥	QR Code Scanning Module
⑦	Card - swiping Module

2.4. Reading Area Schematic Diagram



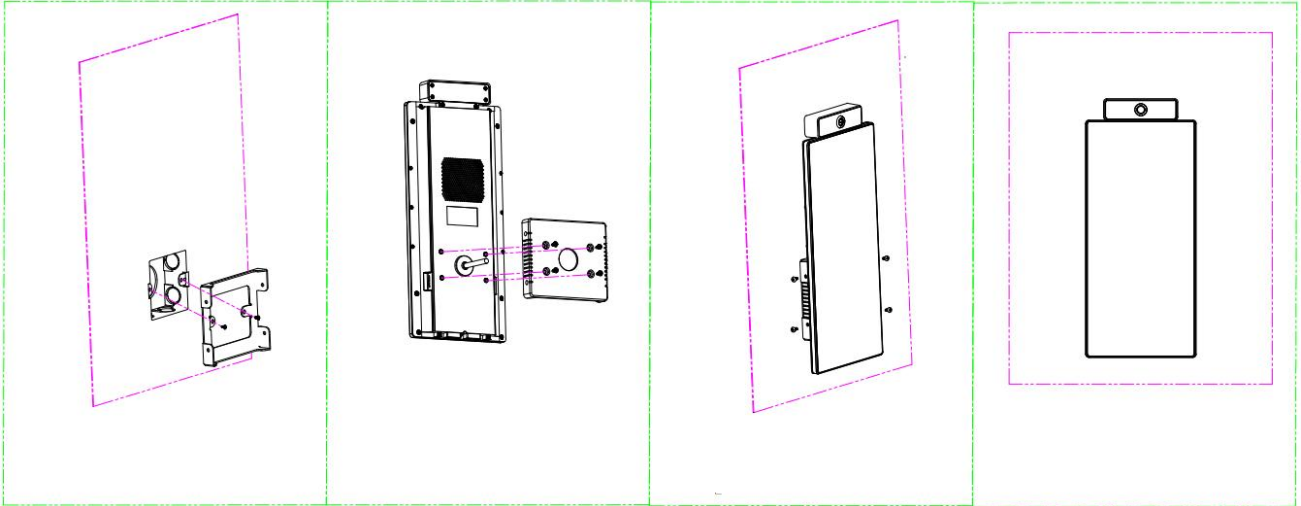
side view



vertical view

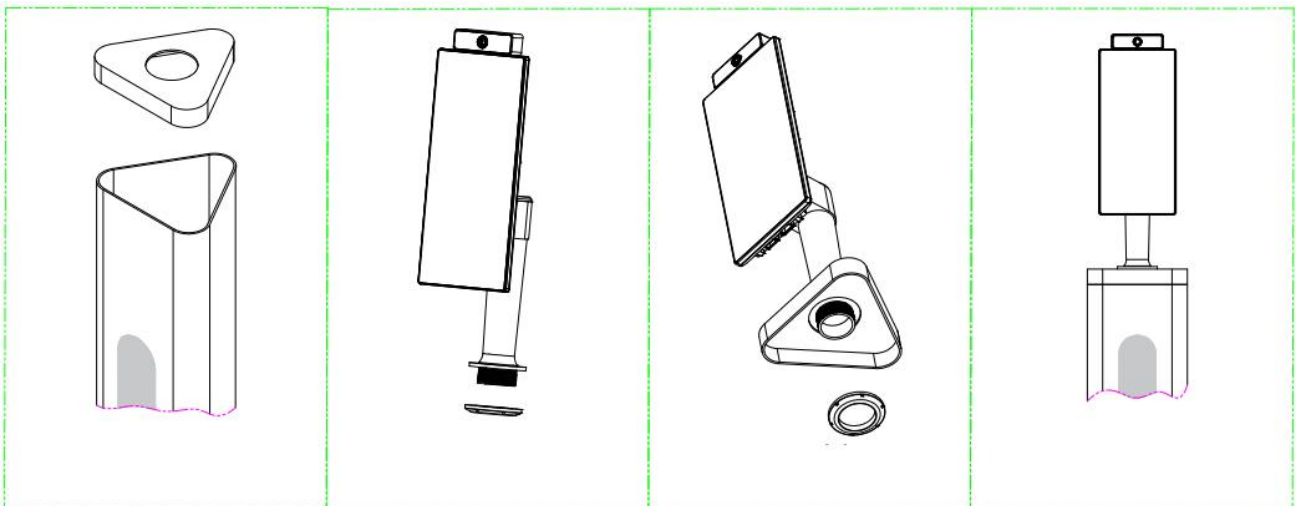
2.5. Installation Method

86 box installation



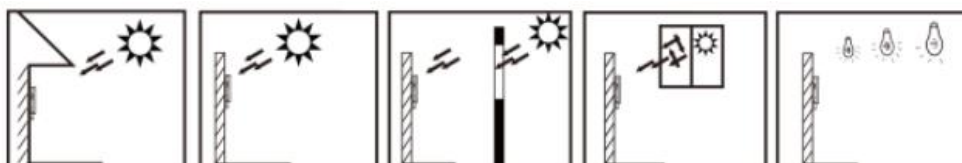
1. Connect the sheet metal bracket to the 86 box with screws.
2. Connect the adapter bracket to the equipment with screws.
3. Install the equipment into the 86 box and connect it with screws on the side.
4. Finish the installation.

Column installation



1. Remove the upper cover plate of the upright column.
2. Remove the bracket nut.
3. Fix the upper cover plate to the bracket.
4. Complete the installation.

Installation Precautions: Avoid backlight, direct sunlight, sunlight shining directly through windows, sunlight shining obliquely through windows, and close - range lighting.

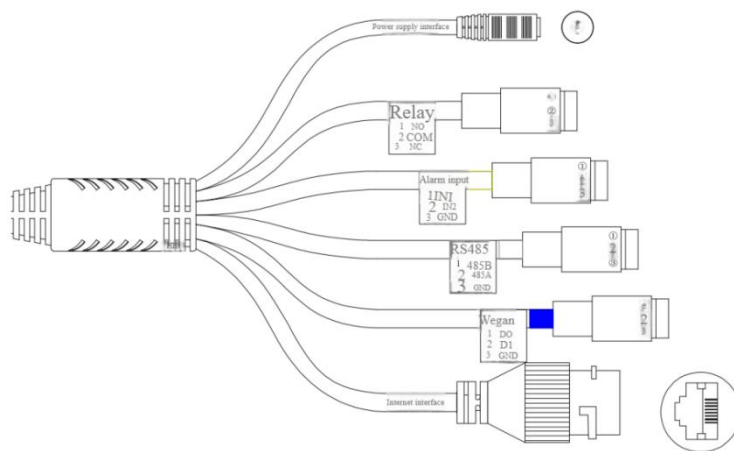


2.6. Device Wiring

Port Description

Screw Terminal Version

The face device has six wiring terminals. Wiring is defined according to the labels on the wiring terminals.



Port Name	Pin No.	Pin Definition
Power	DC Round	12V Power Supply
Relay Interface	1	NO: Normally Open Terminal of the Relay
	2	COM: Common Terminal of the Relay
	3	NC: Normally Closed Terminal of the Relay
Alarm Input	1	IN1: Alarm Input 1
	2	IN2: Alarm Input 2
	3	GND: Ground Wire
RS485	1	485B: 485B Wire
	2	485A: 485A Wire
	3	GND: Ground Wire
Wiegand	1	D0: Wiegand 0
	2	D1: Wiegand 1
	3	GND: Ground Wire
Network Interface	RJ45	Connect to Network Cable

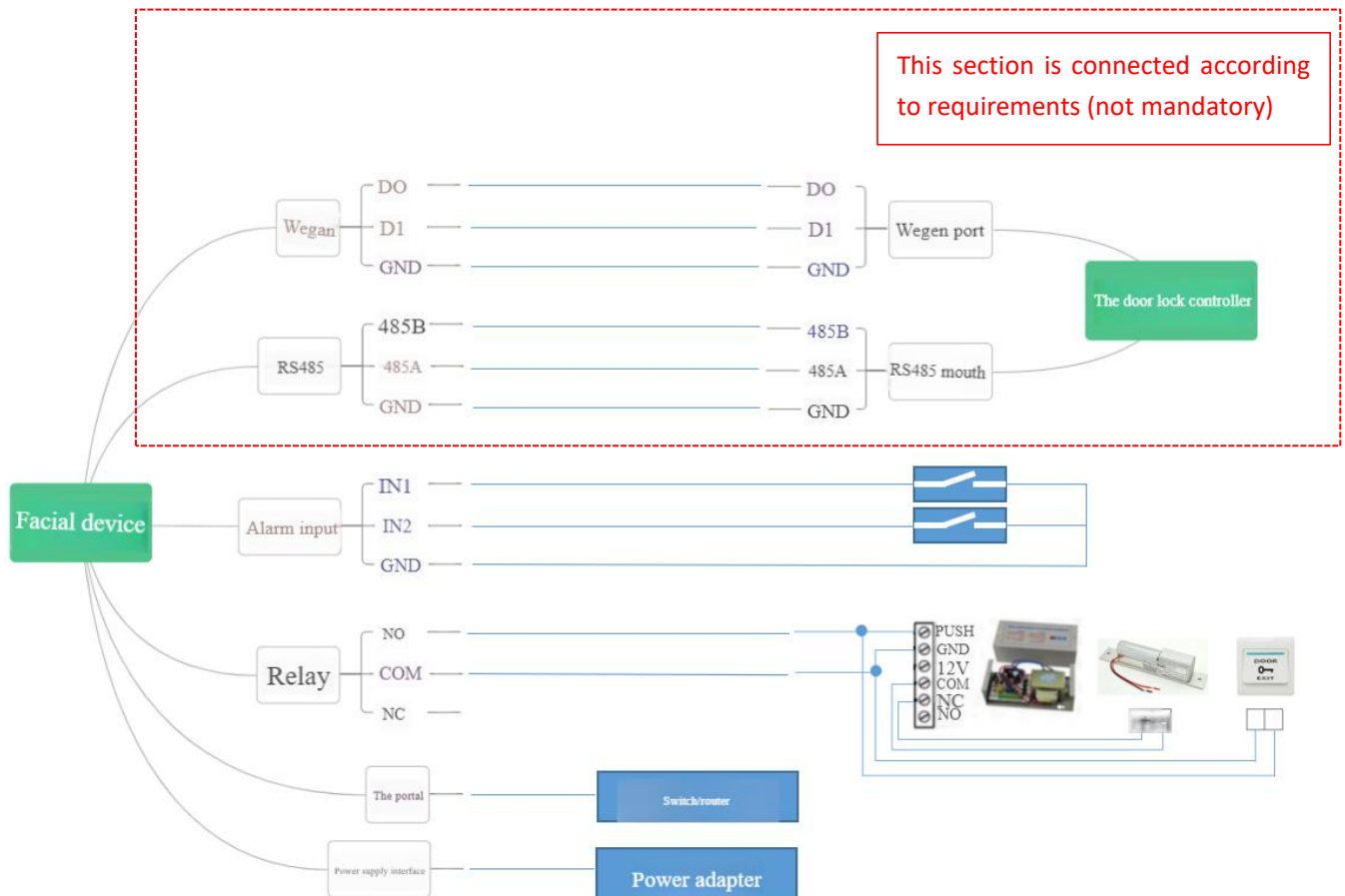
Bare Wire Version

PIN#	Wire Color	Pin Definition	Pin Description
PIN1	Red	VCC	Power Positive
PIN2	Black	GND	Power Ground
PIN3	White	485B	485-B
PIN4	Blue	485A	485-A
PIN5	Brown	GND	Power Ground
PIN6	Orange	D0	Wiegand 0
PIN7	Yellow	D1	Wiegand 1
PIN8	Green	IN1	Alarm Input 1
PIN9	Purple	IN2	Alarm Input 2
PIN10	Gray	NO	Relay Normally Open
PIN11	Pink	COM	Relay Common Terminal
PIN12	Cyan	NC	Relay Normally Closed

Precautions: For unused pins, insulation treatment must be carried out! If the device is damaged due to short - circuit caused by lack of insulation treatment, the user shall bear the responsibility!

Device Wiring Diagram

In the figure, the electric lock mechanism is unlocked when powered off and locked when powered on (two - core wire lock). If the user uses other types of electric locks, the connection shall be made according to the characteristics of the electric lock.



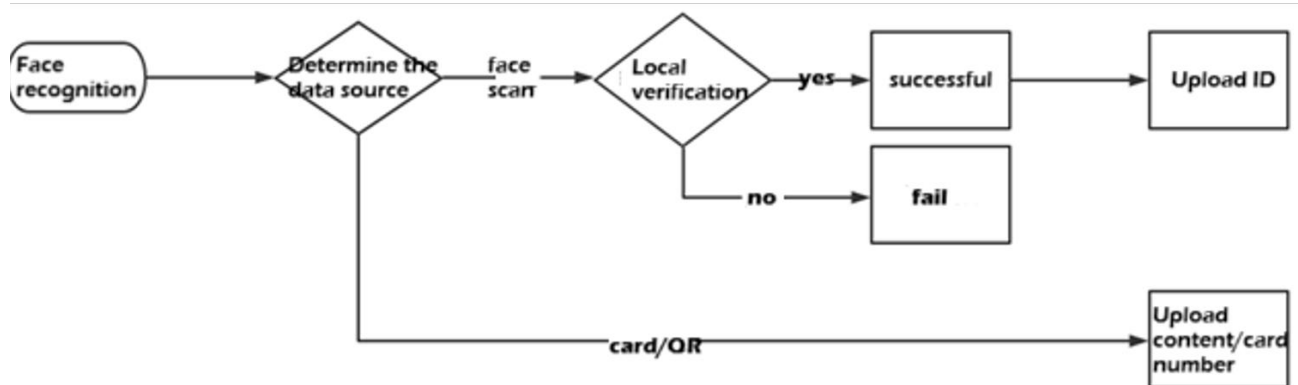
3. Technical Parameters

product parameters		
System Parameters	Operating System: Linux	
	Storage Capacity: 8GB (expandable to 16G & 32G)	
	Processor: ARM Cortex A7 MP2 1GHz	
Display Screen	Size: 8 – inch LCD touch – screen	
	Resolution: 800×1280	
Communication Methods	Wired: 1×10/100M adaptive network port	
	Wireless: 2.4G WiFi	
	1x RS485	
	1×Wiegand 26/Wiegand 34	
	Expandable to support 4G	
Physical Interfaces	Relay: 30V1A	
	2×Alarm signal input interfaces	
Power Supply	Supply Voltage: 9 – 24V(DC) (12V recommended)	
	Max. 16W	
Cameras	RGB Camera:	Field of View: D = 65° , H = 59° , V = 38°
		Aperture: 2.0
		Resolution: 1920×1080
		Focal Length: 4.35MM
	Infrared Camera:	– Field of View: D = 68° , H = 60° , V = 40°
		– Aperture: 2.2
		– Resolution: 1616×1232
		– Focal Length: 2.35MM
Speaker	Built – in two 8Ω 1W speakers	
Material	Fire – resistant ABS + plexiglass	
Operating Temperatur	-20 °C~55°C	
Operating Humidity	10%~90%(no condensation)	
Protection Level	Electrostatic Protection: 8KV contact, 12KV air	
	Dust – proof and Waterproof Level (non – 4G and non – temperature – measuring version): IP66 (other versions are not waterproof)	
Card - swiping Performance Parameters		
Specification:	13.56MHz	
Size:	48mm*33mm	
Distance	0–5cm	
Supported	S50,S70,FM1208,FM1216-137,MIFARE CLASSIC EV1 4K(S70),mifare desfire	

Card Types	ev2 d42,UL,FM12081K+7K,NTAG216,ultralight c,UL EV1,DESFIRE EV2 D41,Ultralight EV1,Mifare Desfire ev2 d82, ID Card Info
QR Code Scanning Performance Parameters	
Decodable Code Systems	QR Code (QR CODE, PDF417, etc.)
Supported Scanning Devices:	Mobile phone screens/paper
Image Sensor	640*480
Reading Directions	Directions: Tilt $\pm 40^\circ$, Rotation $\pm 360^\circ$, Deflection $\pm 30^\circ$
	Horizontal: 62°
	Vertical: 49°
Reading Accuracy:	$\geq 7\text{mil}$
Reading Distance	0~10cm
Scanning Feedback:	Voice prompt
Ambient Illuminance	0~80000Lux
Face Recognition Performance Parameters	
Supports Mask Detection	
1:N Algorithm Dynamic Face Detection (anti - photo, anti - video attack)	
Hardware Infrared Liveness Detection (anti - photo, anti - video attack)	
Portrait Capacity: 50,000	
Recognition Distance: 0.3 - 1.5M	
Pass Rate: $\geq 97\%$ (when capacity reaches 50,000)	
False Recognition Rate: $\leq 0.01\%$ (when capacity reaches 50,000)	
Recognition Time: $< 0.3\text{s}$	

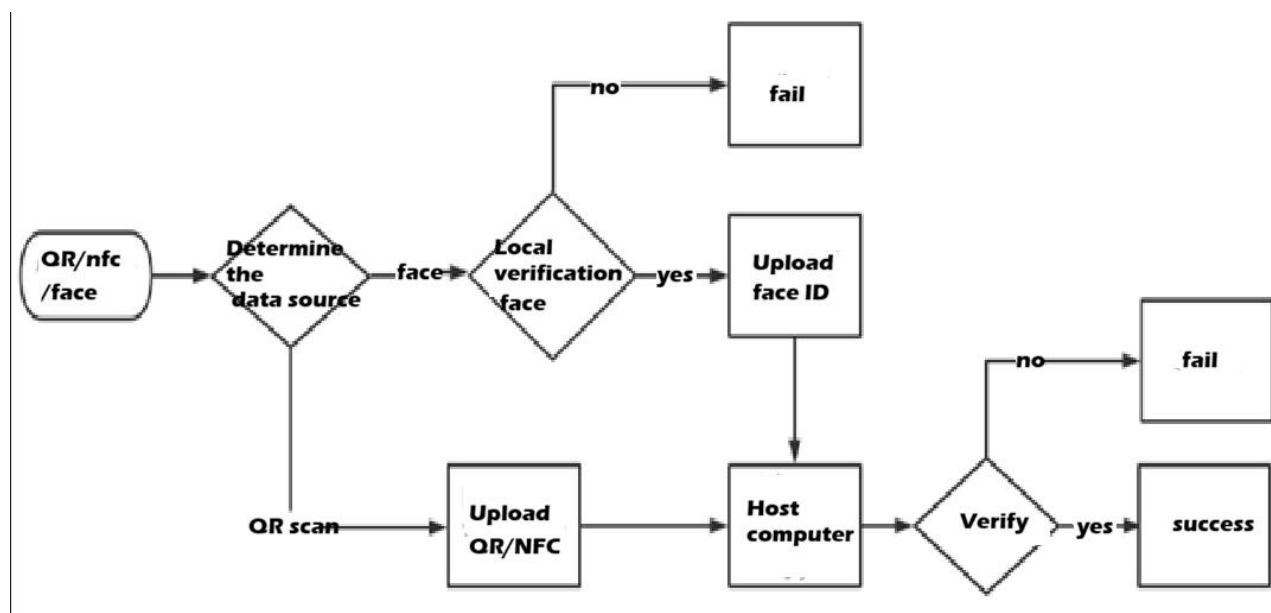
4. Device Working Mode Instructions

4.1. Transparent Transmission Mode



In the transparent transmission mode, when scanning a code or swiping a card, data is directly transmitted without an authentication process. For face - brushing, it only compares with the local face database.

4.2. Protocol Mode

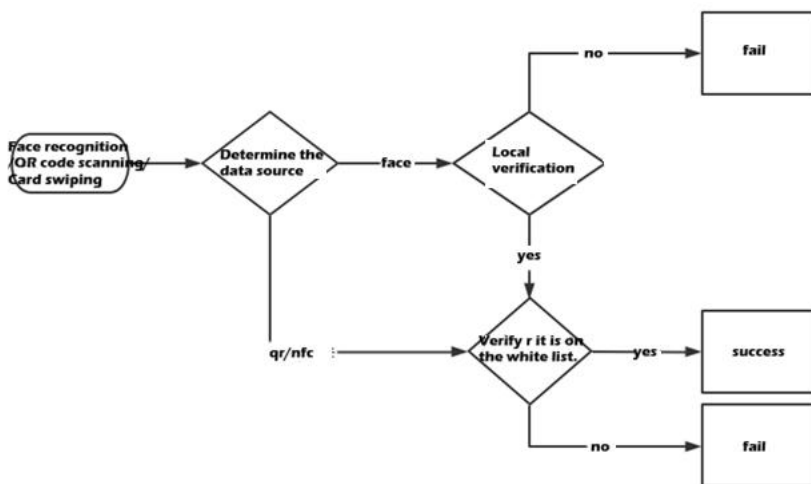


In the protocol mode, users need to build an upper - computer. The device will send data to the upper - computer in a protocol - compliant format, such as via 485, TCP, or HTTP. The upper - computer then receives the data and returns the authentication result. The protocol document can be obtained from the official website..

4.3. Development Mode

Currently, the development mode is only applicable to card reading and writing operations, and other functions are not supported for the time being.

4.4. Whitelist Authentication Mode



5. Device Configuration

5.1. Device Networking Configuration

Please use the face device terminal to log in to the device background and configure the network. The operation steps are as follows: Long - press the device screen to bring up the background settings button, then you can enter the login interface. Enter the password (the default is "password"). After entering the settings interface, select "Network Configuration" and fill in the relevant network information according to your actual network situation.

Note: If the WiFi is an open (password - free) network, you can fill in "123456" in the device password field to connect normally. However, it is not recommended to use an open WiFi as the network stability may be poor.

<

网络设置

网络类型

☒ 有线网

☐ WIFI

☐ 4G

DHCP 配置IP

自动 (DHCP)

IP地址

10.102.106.44

子网掩码

255.255.255.0

网关

10.102.106.124

DNS

10.102.106.124

当前网络状态:

网络已连接

网络测试

10.102.106.124

PI

保存

<

网络设置

网络类型

☐ 有线网

☒ WIFI

☐ 4G

WiFi名称

Vguang_RJ

WiFi密码

vguangrj_o0

DHCP 配置IP

自动 (DHCP)

IP地址

10.102.106.44

子网掩码

255.255.255.0

网关

10.102.106.124

DNS

10.102.106.124

当前网络状态:

网络已连接

网络测试

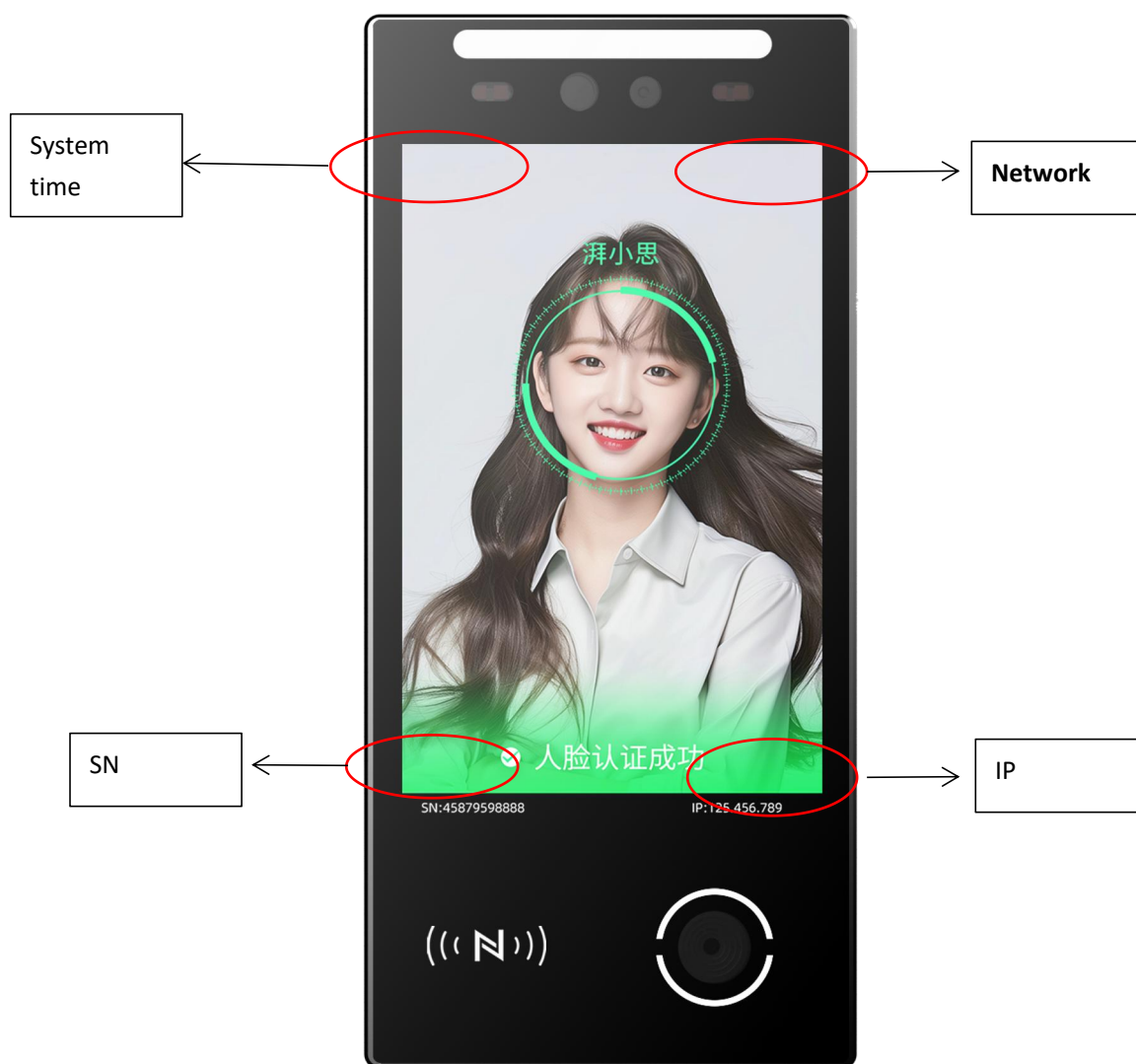
10.102.106.124

PI

保存

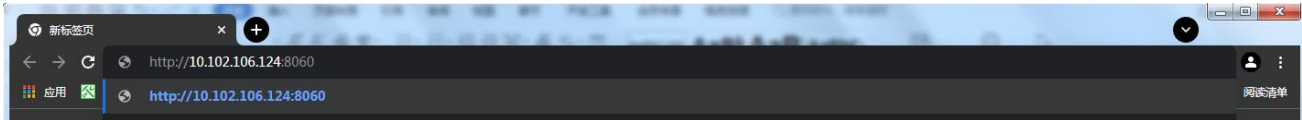
5.2. Logging in to the Face DeviceBackground

After the face device is successfully connected to the network, a network connection icon will be displayed in the upper - right corner of the screen, the device IP address will be shown in the lower - right corner, the system time will be presented in the upper - left corner, and the device SN number will be displayed in the lower - left corner.

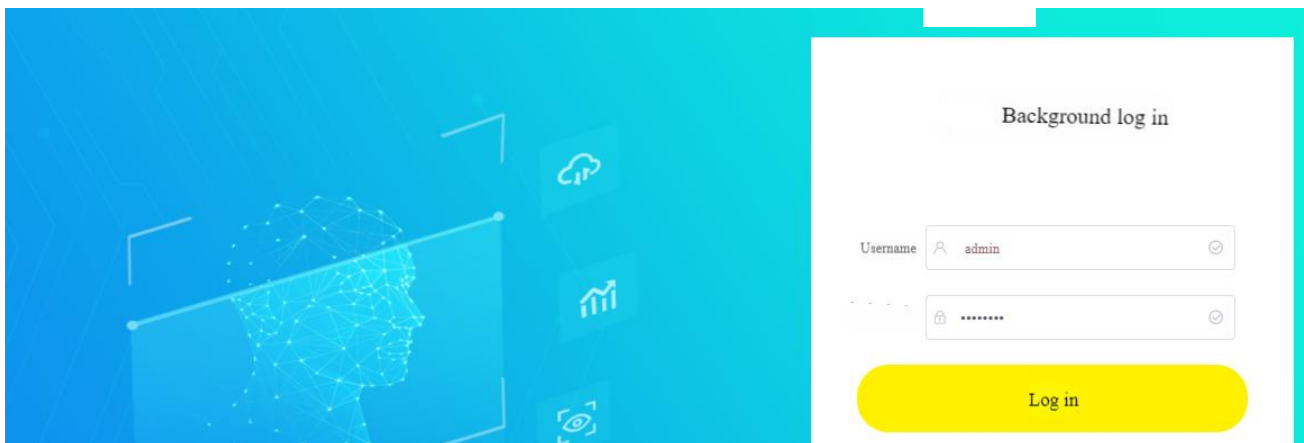


Connect your computer to the same network as the face device. Open a browser, enter "http://device IP address:8060/" in the address bar, and press Enter to enter the background management interface.

Suppose the device obtains an IP address of 10.102.106.124. Enter the device address in the following way and press Enter..



Then you will enter the background login interface, which is as follows. The default username is "admin", and the default login password is "password" (this password is the same as the device password in the "Face register offlinev1.2.3" tool).



After successful login, the background will prompt you to set the "Device Configuration Password".

Please set the device configuration password

Please set the password

Please confirm the password

To ensure the security of the system, please change the password first.

Confirmed

This configuration password is mainly used for setting the QR code scanner working mode, device upgrade, factory reset, and other operations. Click "Confirm" to enter the following device background system..

Equipment management system

Basic settings

8 white list setting

Fixed information

Personal setting

Passage records

HelpAdministrator退出

Basic configuration

Personnel record related configuration

Speech output related configuration

Police related configuration

Device removal setting

Add lighting related settings

Facial related configuration

Brush card related configuration

Scanning related configuration

Channel related configuration

Authentication mode

Network configuration

MQTT related configuration

Camera is calibrated

Set the device time

Automatically adjust the screen brightness

Screen brightness

Automatically Hovered

Automatic close time on the screen

Automatically shielded

Automatically save time

shows SN

Displays the IP

The volume

Shut down打开

Shut downopen

300

\$

Shut downopen

30

\$

not showingis shown

not showingis shown

6. Quick Setup

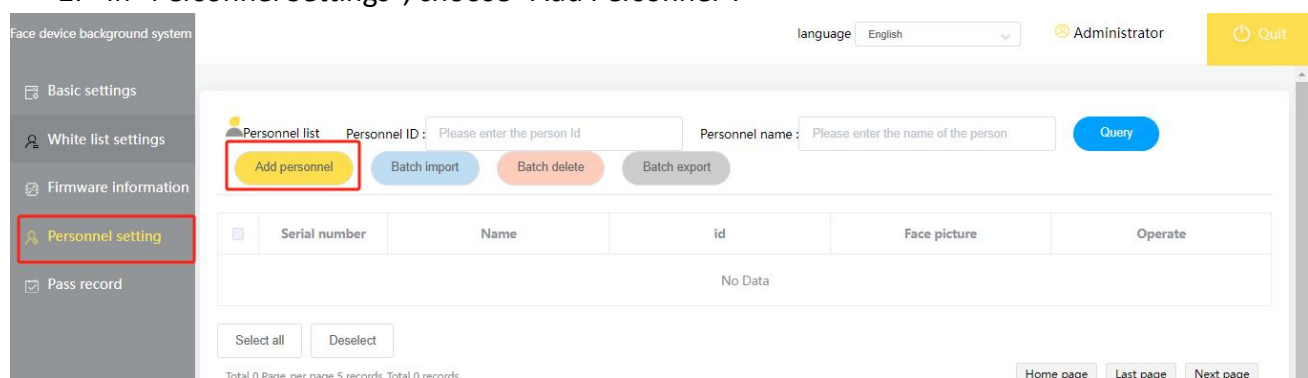
6.1. Scenario One

Scenario Description

1. The device can be connected to the network.
2. After registering faces, people can pass freely.
3. The functions of code - scanning or card - swiping are not needed; or after code - scanning or card - swiping, the QR code content and physical card number can be transparently transmitted via RS485 or Wiegand.

Setup Procedure

1. Log in to the device management background as described in Chapter 5.
2. In "Personnel Settings", choose "Add Personnel".



3. Enter a personnel ID, such as 123, and the personnel name, like "Zhang San". Click the "+" button, select a local photo, and then click "Confirm"; or directly take a photo for input.

The screenshot shows the 'Add personnel' form. The left sidebar contains a menu with 'Basic settings', 'White list settings', 'Firmware information', 'Personnel setting' (highlighted), and 'Pass record'. The main area is titled 'Personnel list' and includes a 'Personnel ID' input field, 'Batch delete', and 'Batch export' buttons. Below is a table with columns 'Serial number' and 'Name'. At the bottom, there are 'Select all' and 'Deselect' buttons, and a status bar showing 'Total 0 Page per page 5 records Total 0 records'.

The 'Add personnel' form on the right includes the following fields and options:

- ID: 123
- Name: jack
- Department: list
- idCard: Number
- Sex: Select
- Power: Select
- Face picture: Local import (selected), Photo entry
- A large square box with a '+' sign for the face picture.
- A 'Confirm' button at the bottom.

At the bottom right, there is a language selector set to 'English' and a 'Quit' button.

4.e platform will prompt that the input is successful.

5.t the face - brushing/code - scanning/card - swiping working mode to the transparent transmission mode.

The screenshot shows the 'Basic settings' page. The left sidebar contains a menu with 'Basic settings' (highlighted), 'White list settings', 'Firmware information', 'Personnel setting', and 'Pass record'. The main area is titled 'Basic configuration' and includes a table with various settings.

The 'Basic configuration' table includes the following settings:

- Recognition mode: Face / card in one, Face / code in one, One of face / card / code (selected)
- Verification scope of witness card: Strangers only, All (selected)
- Witness verification threshold: A slider bar.
- Working mode of swiping card and scanning code: Transparent transmission mode (selected), Local whitelist mode, Protocol mode, Development mode
- Working mode of face recognition: Transparent transmission mode (selected), Local whitelist mode, Protocol mode, Development mode
- Online verification: No (selected), Yes
- Protocol channel: HTTP, 485 (selected), TCP
- Protocol verification succeed action: No action, Broadcast voice (selected), Broadcast voice and output relay, Output relay

At the bottom right, there is a language selector set to 'English' and a 'Quit' button.

6, After successful saving, face - brushing authentication can be carried out, and code - scanning or card - swiping will output the QR code content and card - swiping data.

6.2. Scenario Two

Scenario Description

1. The face device cannot be connected to the network.

2. Only face registration is required, and people can pass by face - brushing.
3. The face - brushing working mode is set to the "transparent transmission mode" by default when the device leaves the factory.

Setup Procedure

1. Log in to the device background as described in Chapter 5.
2. Select "Personnel Registration".
3. Select "New".
4. Enter the personnel ID.
5. Wait for the device to take a photo to obtain the face registration information.

6.3. Scenario Three

Scenario Description

1. The device can be connected to the network.
2. Code - scanning/card - swiping operates in the whitelist mode, that is, the authentication permissions for code - scanning/card - swiping are pre - entered into the device, and people can open the door by code - scanning or card - swiping.
3. Face - brushing can operate in any mode.

Setup Procedure

- 1, Log in to the device management background as described in Chapter 5.
- 2, Select "Whitelist Settings".
- 3, Select "New".
- 4, Enter the personnel ID.

When the user type is "Face", enter the personnel ID used during face registration.

When the user type is "Card", the ID is the hexadecimal positive - order card number, with letters in lowercase, e.g., a9decad1.

When the user type is "QR Code", the ID is a custom - defined card number. Users need to

generate a QR code image according to the "Authorization Pass Code Mechanism User Manual_V1.0", and they can use this image to scan the code and open the door.

5.Select the start time and end time to specify the valid period of the whitelist.

6.Select "Non - repeating" for the repetition type.

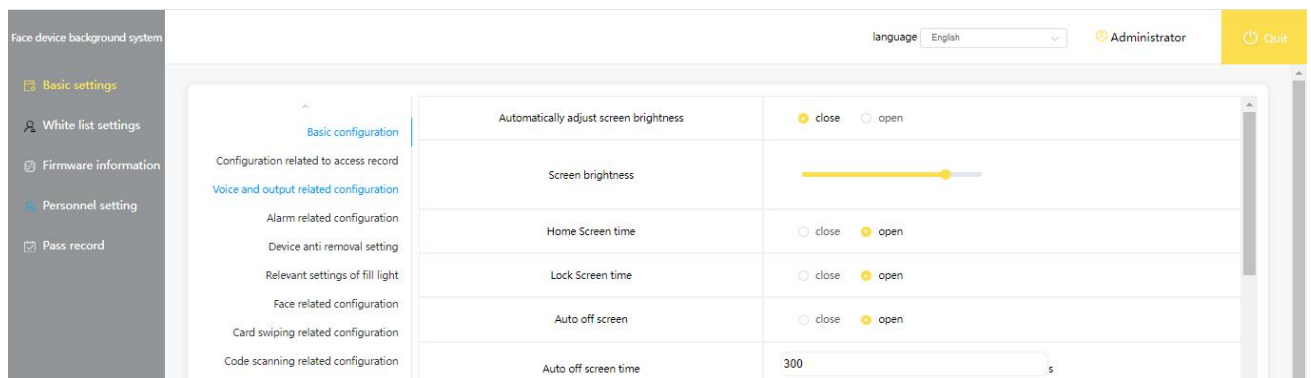
7.Click "OK" to complete the setup.

7. Device Background Instructions

7.1. Basic Settings

Basic

Configuration

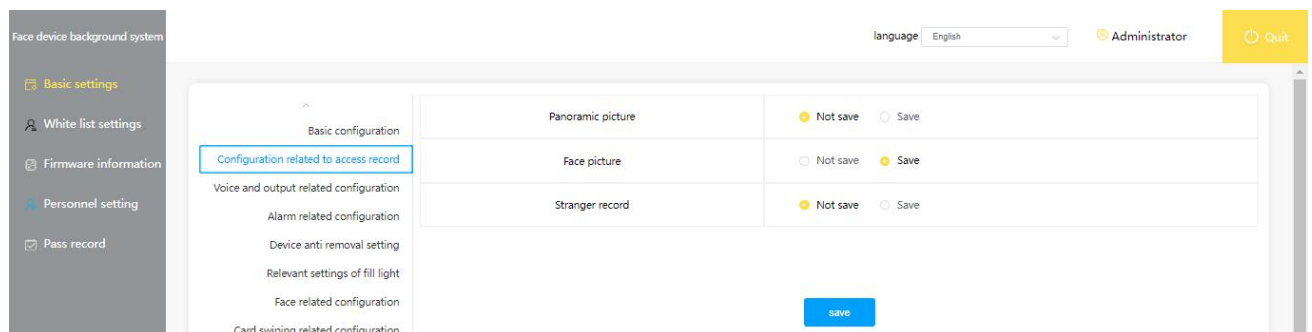


The following is a list of configuration item descriptions:

Configuration Item	Default Value	Description
Auto adjust Screen Brightness	Off	Turn on/off the device's auto - adjust screen brightness function
Screen Brightness	80	Set the screen brightness value
Auto - screen Off	On	The screen turns off after a period of standby
Auto - screen Off Time	300s	Standby time before the screen turns off
Auto - screen Saver	On	Enter the screen saver screen after a certain period of standby
Auto screen Saver Time	30s	Standby time before entering the screen saver
Display SN	Display	Whether to display the SN number in the lower - right corner of the screen
Display IP	Display	Whether to display the device IP address in the lower - right corner of the screen
Display logo	NotDisplay	Logo image in the upper - left corner of the face - brushing interface or in the middle of the screen saver

Upload logo Image		Select an image to set the logo image (PNG format, 100x70 pixels)
Screen Saver Image		Select an image to set the screen saver image (JPG format, 1280x800 pixels)
Volume	60	Adjust the volume level
Auto - update Time	On	Automatically update the device time when connected to the network
Auto - set Time Zone	On	Automatically set the device time zone when connected to the network
Device Name	\	Name the device

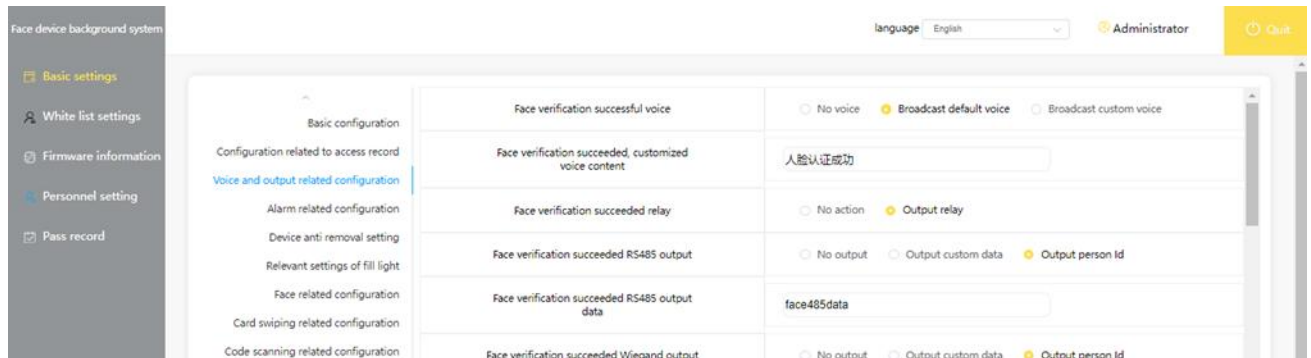
Pass Record - related Configuration



The following is a list of configuration item descriptions:

Configuration Item	Default Value	Description
Panoramic Image	Not Saved	Set whether to save the panoramic image during face - brushing
Face Image	Saved	Only save the face photo during face - brushing, with a higher priority than the panoramic image
Stranger Record	Not Saved	Set whether to save the face - brushing records of strangers

Voice and Output - related Configuration



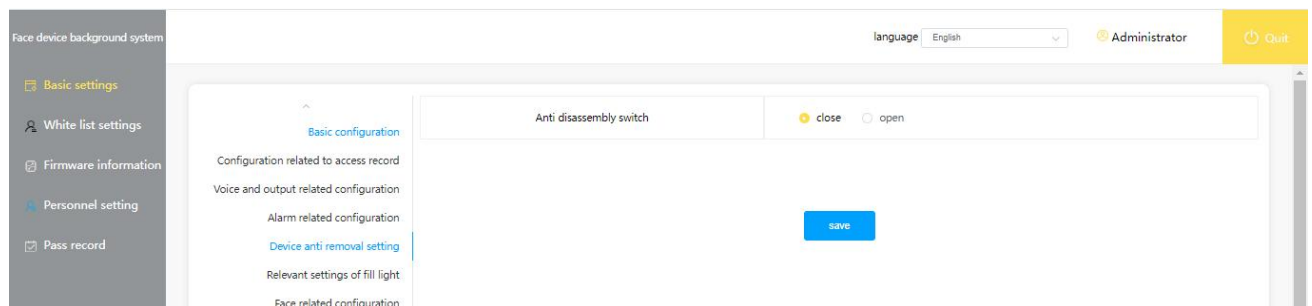
The following is a list of configuration item descriptions:

Configuration Item	Default Value	Description
Voice Prompt for Successful Face Verification	Play Voice	Set the voice feedback action when the face device successfully recognizes a face. Play Custom Voice: Does not take effect in the protocol mode and development mode
Custom Voice Content for Successful Face Verification	"Face verification successful"	Set the custom voice content
Relay Action for Successful Face Verification	Output Relay	Set the relay action when face recognition is successful
485 Output for Successful Face Verification	Output Personnel ID	Set the data content output by the 485 port when face recognition is successful
485 Output Data for Successful Face Verification	face485data	Takes effect when the previous item is set to "Output Custom Data"
Wiegand Output for Successful Face Verification	Output Personnel ID	Set the data content output by the Wiegand port when face recognition is successful. The personnel ID must comply with the Wiegand 26 or Wiegand 34 standard
Wiegand Output Data for Successful Face Verification	1234567890	Takes effect when the previous item is set to "Output Custom Data"
Voice Prompt for Failed Face Verification	Play Voice	Set the voice feedback action when the face device fails to recognize a face. Play Custom Voice: Does not take effect in the protocol mode and development mode
Custom Voice Content for Failed Face Verification	"Face verification failed"	Set the custom voice content
Voice Prompt for Failed Face Verification	Play Voice	Set the voice feedback action when the face device fails to recognize a face. Play Custom Voice: Does not take effect in the protocol mode and development mode

Custom Voice Content for Successful Card - swiping Verification	"Card - swiping successful"	Set the custom voice content
Relay Action for Successful Card - swiping Verification	Output Relay	Set the relay action when card - swiping is successful
485 Output for Successful Card - swiping Verification	Output Card Number	Set the data content output by the 485 port when card - swiping is successful
485 Custom Output Data for Successful Card - swiping Verification	card485data	Takes effect when the previous item is set to "Output Custom Data"
Wiegand Output for Successful Card - swiping Verification	Output Card Number	Set the data content output by the Wiegand port when card - swiping is successful
Wiegand Output Data for Successful Card - swiping Verification	1233211230	Takes effect when the previous item is set to "Output Custom Data"
Voice Prompt for failed Code - scanning Verification	Play Default Voice	Set the voice feedback action when card - scanning is successful.
		Play Custom Voice: Does not take effect in the protocol mode and development mode
Custom Voice Content for Successful Card - swiping Verification	"card- scanning failed"	Set the custom voice content
Voice Prompt for Successful Code - scanning Verification	Play Default Voice	Set the voice feedback action when code - scanning is successful.
		Play Custom Voice: Does not take effect in the protocol mode and development mode
Custom Voice Content for Successful Code - scanning Verification	"Code - scanning successful"	Set the custom voice content
Relay Action for Successful Code - scanning Verification	Output Relay	Set the relay action when code - scanning is successful
485 Output for Successful Code - scanning Verification	Output Card Number	Set the data content output by the 485 port when code - scanning is successful
485 Output Data for Successful Code - scanning Verification	qr485data	Takes effect when the previous item is set to "Output Custom Data"
Wiegand Output for Successful Code - scanning Verification	Output Card Number	Set the data content output by the Wiegand port when code - scanning is successful
Wiegand Output Data for	9876543210	Takes effect when the previous item is set to

Successful Code - scanning Verification		"Output Custom Data"
Voice Prompt for Failed Code - scanning Verification	Play Default Voice	Set the voice feedback action when code - scanning fails. Play Custom Voice: Does not take effect in the protocol mode and development mode
Custom Voice Content for Failed Code - scanning Verification	"Code - scanning failed"	Set the custom voice content

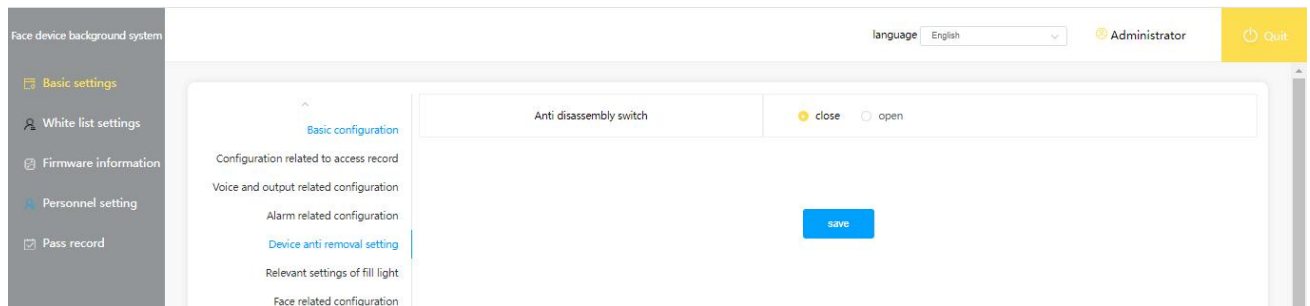
Alarm - related Settings



The following is a list of configuration item descriptions:

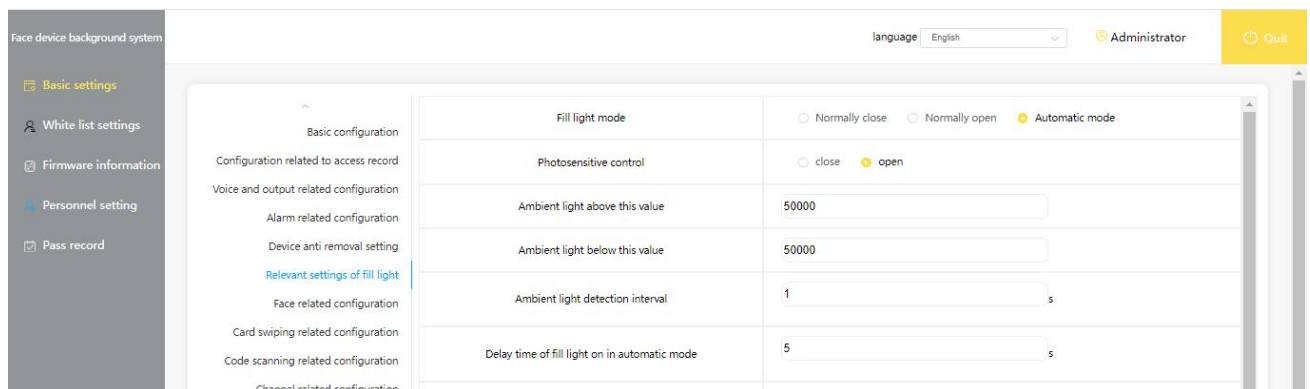
Configuration Item	Default Value	Description
Alarm Service Switch	Off	Set to turn on/off the alarm signal triggering function of the face device
Alarm Delay	3s	The alarm trigger signal needs to last for 3 seconds to trigger the alarm voice
Alarm Signal Trigger Type	Not Triggered	Set the alarm trigger method
Alarm Trigger Output Switch	On	Set the feedback action of the device after the alarm signal is triggered
Alarm Output Relay	On	The relay acts immediately when the alarm signal is triggered
Alarm Wiegand Output	Off	The Wiegand data is output immediately when the alarm signal is triggered
485 Output	Off	The 485 data is output immediately when the alarm signal is triggered
Voice Playback	Default Voice	The voice played when the alarm signal is triggered

Device Anti - removal Settings



By default, it is turned off. When turned on, the device will alarm when it is removed or when it is powered on but not installed. (This function is not supported by the 105 device for the time being)

Fill Light - related Settings



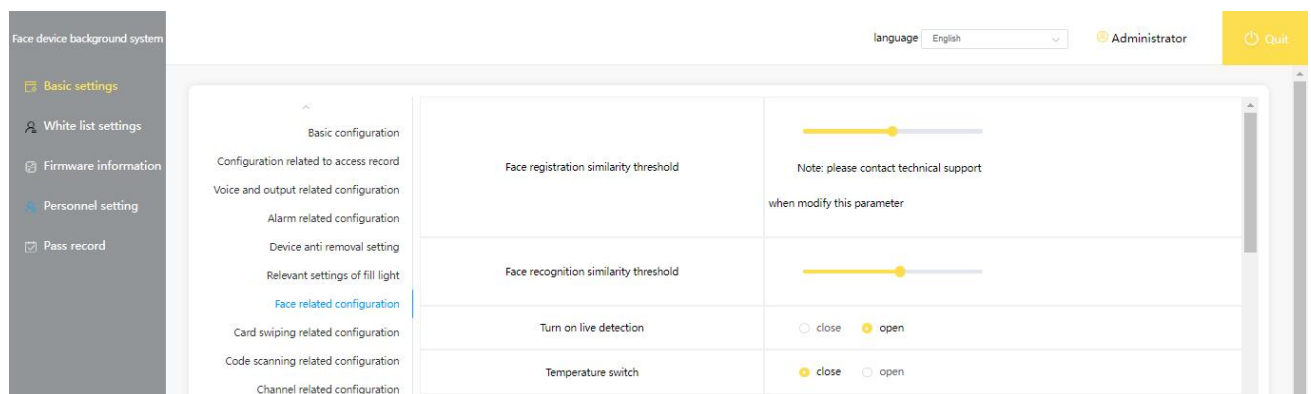
The following is a list of configuration item descriptions:

Configuration Item	Default Value	Description
Fill Light Mode	Auto Mode	Set the fill light working mode. In the auto mode, the fill light turns on or off automatically according to the face - brushing needs
Photosensitive Control	On	This item does not take effect for the time being
Ambient Light Higher Than This Value	1100	Takes effect in the auto mode: The fill light turns off when the ambient light is higher than this value
Ambient Light Lower Than This Value	500	Takes effect in the auto mode: The fill light turns on when the ambient light is lower than this value
Ambient Light Detection Interval	1	The device detects the ambient light intensity every second

Fill Light Delay Time in Auto Mode	10	The delay time for the fill light to turn on in the auto mode
Fill Light Brightness	80	Set the fill light brightness

Precautions: It is recommended to keep the default values for the high and low ambient light values. If it is necessary to adjust due to environmental limitations, the high value should be at least 600 greater than the low value. Otherwise, the device's backlight will behave abnormally.

Face - related Configuration

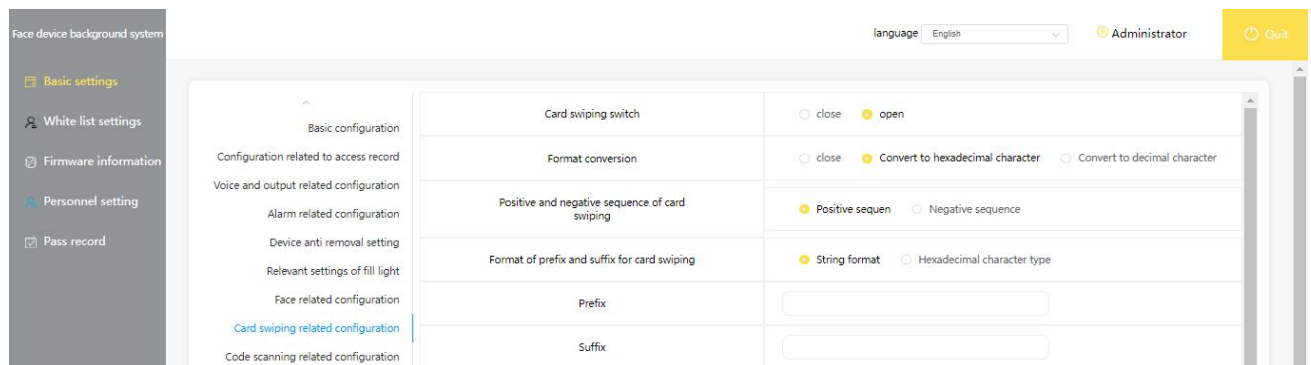


The following is a list of configuration item descriptions:

Configuration Item	Default Value	Description
Face Registration Similarity Threshold	50	Set the face detection standard during registration. It is recommended to keep the default value. The larger the value, the stricter the detection
Face Recognition Similarity Threshold	54	Set the face detection standard during face - brushing. It is recommended to keep the default value. The larger the value, the stricter the detection
Enable Liveness Detection	On	Set whether to turn on the liveness detection function
Temperature Switch	Off	Set whether to turn on the temperature measurement function
Alarm Temperature	37.299	Set the body temperature alarm threshold
Number of Faces for Recognition Configuration	1	Only supports recognizing 1 person at a time
Face Recognition	On	Set whether to turn on the face recognition function
Infrared Image	Off	Set whether to turn on the infrared image. It is recommended to keep it off
Liveness Detection Threshold	10	Set the liveness detection standard. It is recommended to keep the default value. The larger the value, the

		stricter the detection
Mask Detection	Off	Detect whether the person is wearing a mask
Mask Recognition	On	When the person wearing a mask is face - brushing, turning on this item helps with successful recognition
Mask Threshold	53	Set the detection standard for recognizing the face of a person wearing a mask. It is recommended to keep the default value. The larger the value, the stricter the detection
Recognition Distance	150cm	Set the maximum face recognition distance
Repeated Broadcast Interval	5s	Set the repeated broadcast time interval
Repeated Recognition Time Interval	1.5s	Set the face repeated recognition interval time
Recognition Timeout	1s	Set the face recognition timeout
Repeated Recognition Switch	On	Set whether to turn on the function of detecting repeated face recognition
Stranger Voice	"Hello, stranger"	The voice played when an unregistered face is recognized
Voice Mode	No Voice	Set the voice played when face verification is successful
Greeting	No Voice	When the previous item is set to play a greeting, select the greeting type

Card - swiping - related Configuration

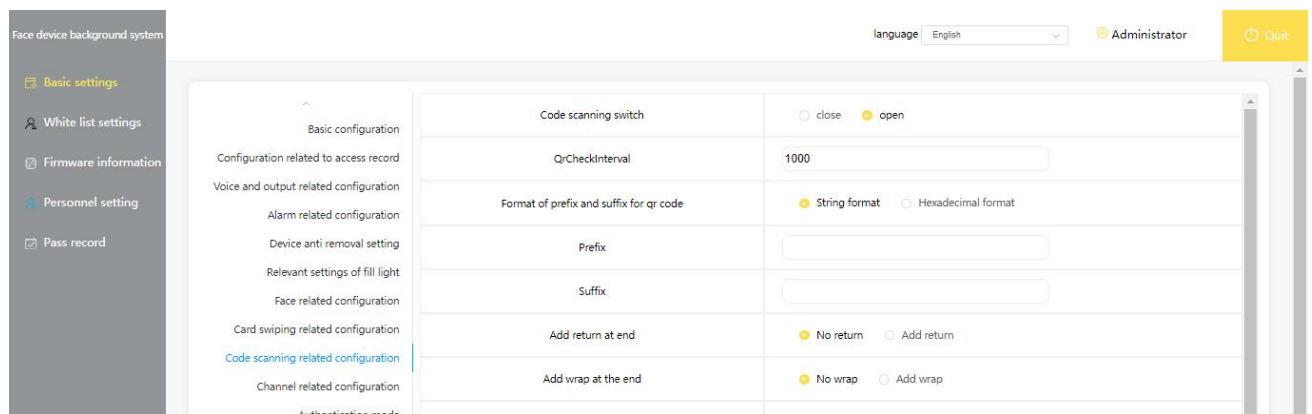


The following is a list of configuration item descriptions:

Configuration Item	Default Value	Description
Card - swiping	On	Set whether to turn on the card - swiping function

Switch		
Format Conversion	Off	Set the card - swiping output format
Card - swiping Order	Positive Order	Set the positive/negative order format of the card - swiping output
Card - swiping Prefix and Suffix Format	Hexadecimal	Set the prefix and suffix format of the card number
Prefix		Prefix
Suffix		Suffix
Add Carriage Return at the End	Off	Add Carriage Return at the End
Add Carriage Return at the End	Off	Add Carriage Return at the End

Code - scanning - related Configuration



The following is a list of configuration item descriptions:

Configuration Item	Default Value	Description
Code - scanning Switch	On	Set whether to turn on the code - scanning function
QR Code Prefix and Suffix Format	String Format	Set the prefix and suffix format of the QR code
Code - scanning Prefix		Code - scanning Prefix
Code - scanning Suffix		Code - scanning Suffix
Add Carriage Return at the End	Off	Add Carriage Return at the End
Add Line Feed at the End	Off	Add Line Feed at the End
Wiegand Output Format Conversion	No Conversion	Takes effect when the code - scanning output channel is set to Wiegand

Channel - related Configuration

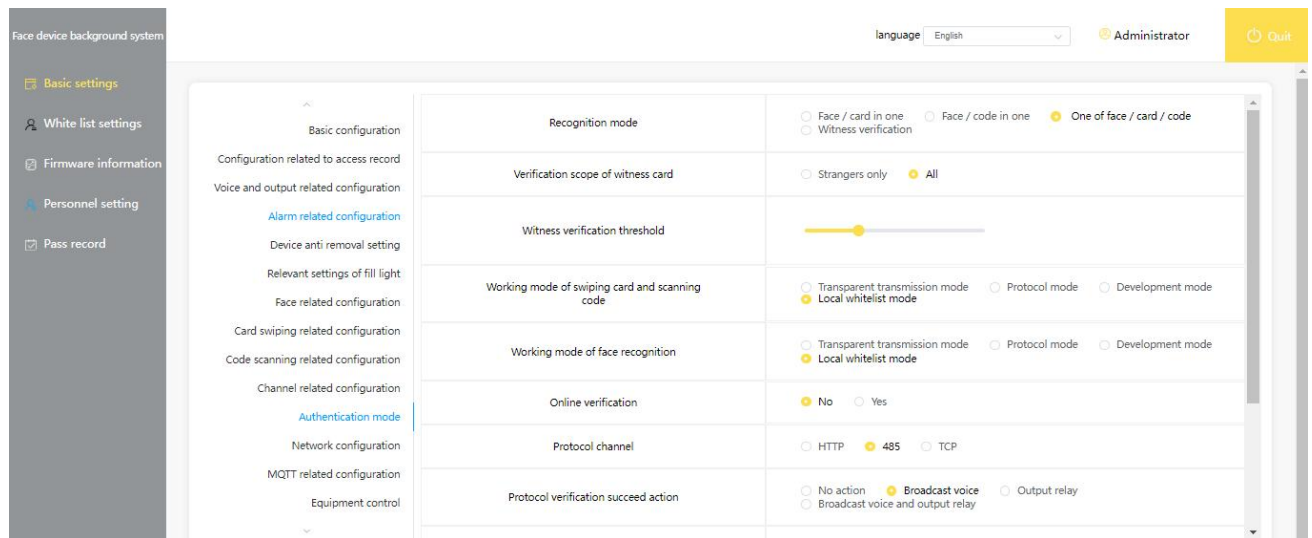
The screenshot shows the 'Channel related configuration' section of the Smart Face Recognition Terminal. The interface includes a sidebar with navigation options: Basic settings, White list settings, Firmware information, Personnel setting, and Pass record. The main area displays the following configuration items:

- TCP switch:** Radio buttons for 'close' (selected) and 'open'.
- TCP server IP:** Text input field containing '10.102.106.116'.
- TCP server port number:** Text input field containing '8060'.
- RS485 baud rate:** Text input field containing '115200-8-N-1'.
- Wiegand:** Radio buttons for 'Wiegand 26' and 'Wiegand 34' (selected).
- Relay delay time:** A numeric input field with a value of '7000' and a unit selector set to 'ms'.
- Relay operation mode:** Radio buttons for 'Equipment's own relay' (selected) and 'SA100 Security Module'.

Channel - related Configuration

Configuration Item	Default Value	Description
TCP Switch	Off	Set whether to enable the TCP transmission channel
TCP Server IP	\	Set TCP Server IP
TCP Server Port Number	\	Set TCP Server Port Number
RS485 Baud Rate	115200-8-N-1	Set RS485 Baud Rate
Wiegand	Wiegand 34	Set Wiegand
Relay Delay Time	2000ms	Set the holding time of the relay action when the authentication is successful

Authentication Mode

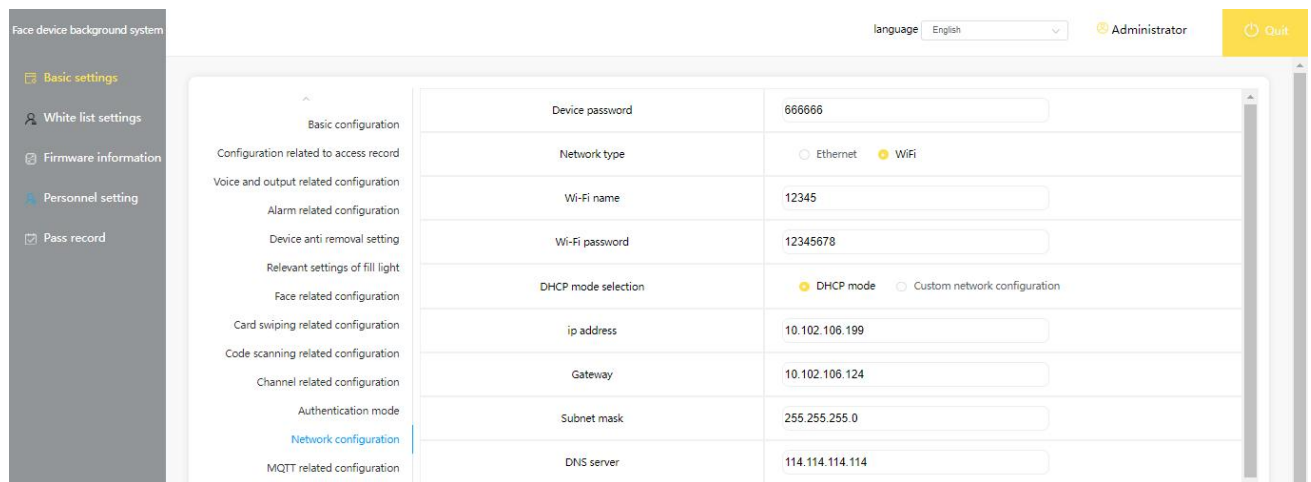


Channel - related Configuration

Configuration Item	Default Value	Description
Recognition Mode	Any of Person/Card/Code	The other two items are not supported yet
Card - swiping and Code - scanning Working Mode	Protocol Mode	Working mode (for card - swiping/code - scanning: 1. Transparent Transmission Mode, 2. Protocol Mode, 3. Development Mode, 4. Local Whitelist Mode). Note: When it is in the development mode, the face - brushing working mode will also change to the development mode simultaneously
Face - brushing Working Mode	Transparent Transmission Mode	Working mode (for card - swiping/code - scanning: 1. Transparent Transmission Mode, 2. Protocol Mode, 3. Development Mode, 4. Local Whitelist Mode). Note: When it is in the development mode, the face - brushing working mode will also change to the development mode simultaneously
Online Verification	No	Valid when card - swiping/code - scanning or face - brushing is in the whitelist mode. "Yes": Prioritize offline; "No": Only offline
Protocol Channel		Protocol channels (1. HTTP, 2. 485, 3. TCP). Note: In the development mode, the channel in this configuration does not support HTTP. If HTTP is configured, it will default to TCP
Actions for Successful		Actions for successful protocol verification

Protocol Verification		(corresponding bit positions with 1 are valid, bit1: Play voice, bit2: Output relay)
Actions for Failed Protocol Verification		Actions for failed protocol verification (bit1: Play voice, bit2)
HTTP Protocol Callback Address		HTTP protocol callback address
HTTP Request Timeout		HTTP Request Timeout

Network Configuration

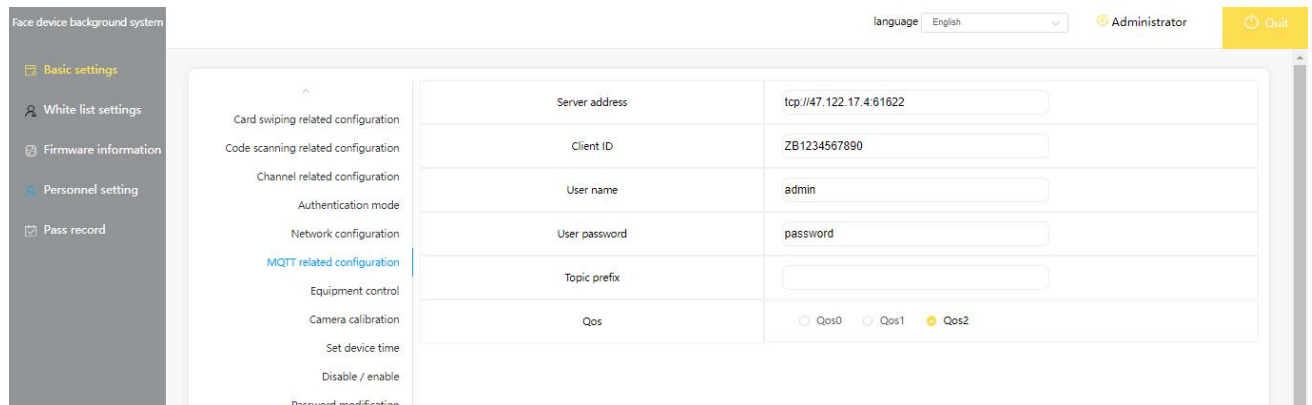


The following is a list of configuration item descriptions:

Configuration Item	Default Value	Description
Device Password	Default is the device password set during initial system login	The device password set when initially logging into the system.
Network Type	Subject to the configuration in the configuration tool	Set the networking method.
Wi - Fi Name	\	Wi - Fi Name
Wi - Fi Password	\	Wifi Password
DHCP Mode Selection	DHCP	DHCP Mode Selection
IP Address	\	Configure when "Custom Network Configuration" is selected.
Gateway	\	Configure when "Custom Network Configuration" is selected.
Subnet Mask	\	Configure when "Custom Network Configuration" is selected.

DNS Server	\	Configure when "Custom Network Configuration" is selected.
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MQTT - related Configuration



The following is a list of configuration item descriptions:

Configuration Item	Default Value	Description
Server Address	0.0.0.0	Set Server Address
Client ID	123456788	Set Client ID
Username	admin	Set Username
User Password	password	Set User Password
Topic Prefix	\	Set Topic Prefix
Qos	Qos2	Set qos

Camera Calibration

This is a device debugging item, and users are prohibited from using this function.

Set Device Time

Set the system time of the face device.

Disable/Enable

Disable or enable the device.

Password Modification

Modify the background login password and the device configuration password.

Device Restart

- . Restart the face device.

7.2. Whitelist Settings

When the card - swiping/code - scanning or face - brushing working mode is set to the whitelist working mode, the personnel IDs set in the whitelist can pass normally.

The screenshot shows the 'White list settings' page. On the left is a sidebar with options: Basic settings, White list settings (selected), Firmware information, Personnel setting, and Pass record. The main area has a top bar with 'language: English', 'Administrator', and a 'Quit' button. Below this are search filters: 'User type' (dropdown), 'User ID' (text input), and 'Time' (date range). Action buttons 'Query', 'Add' (highlighted with a red box), and 'Export excel' are present. A table lists personnel with columns: Serial number, Person ID, Name, Personnel type, Start time, End time, Repetition type, Repeat start time, Repeat end time, and Operate. Two entries are shown, both with 'No repetition'.

Serial number	Person ID	Name	Personnel type	Start time	End time	Repetition type	Repeat start time	Repeat end time	Operate
1	9sqhbijsko26eh7x		Face	2020-08-01 18:28:48	2032-10-26 18:01:58	No repetition	0	0	Change Delete
2	9sqhbijsko26eh7x		103	2020-08-01 18:28:48	2032-10-26 18:01:58	No repetition	0	0	Change Delete

The 'Add' modal form contains the following fields:

- * Person ID: Please enter user ID
- * Personnel type: Please choose personnel type (dropdown)
- Start time: Please choose start time (calendar icon)
- End time: Please choose end time (calendar icon)
- Repetition type: Please choose repetition type (dropdown)
- Name: Please enter your name
- Department: Please enter the Department
- Sex: Please select gender (dropdown)
- MobilePhone: Please enter your mobile number
- JobNum: Please enter the job number

 At the bottom are 'Cancel' and 'Confirm' buttons.

Select the personnel ID, user type, start and end times of the whitelist, and the repetition type to be set in the whitelist.

When the user type is selected as "QR Code", a QR code needs to be generated according to the "Authorization Pass Code Mechanism User Manual".

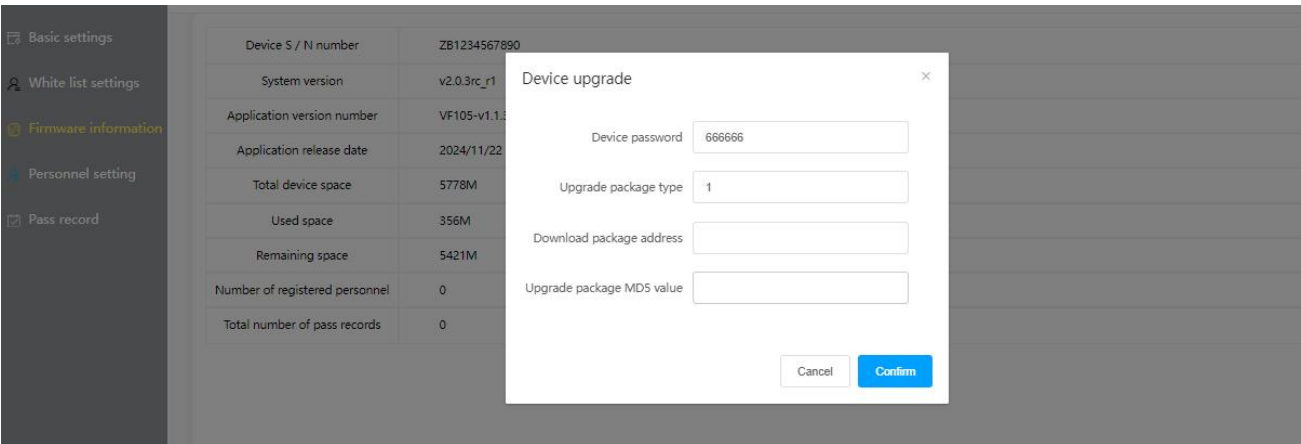
When the user type is selected as "Face", the user ID is the personnel ID set during face registration.

When the user type is selected as "Card", the user ID is the card number.

7.3. Firmware Information

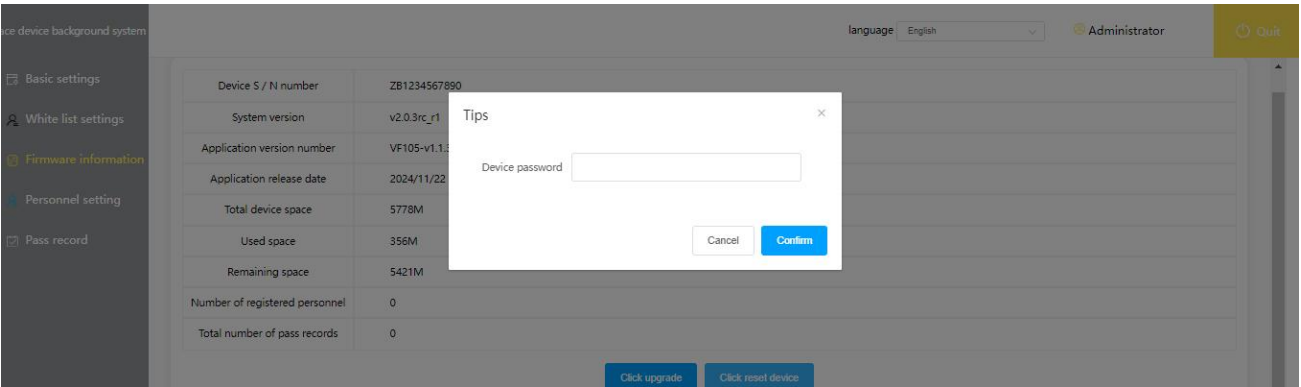
This part is mainly used to upgrade the device or restore the device to its factory settings.

Firmware Upgrade



Contact the manufacturer to obtain the upgrade address and MD5 value.

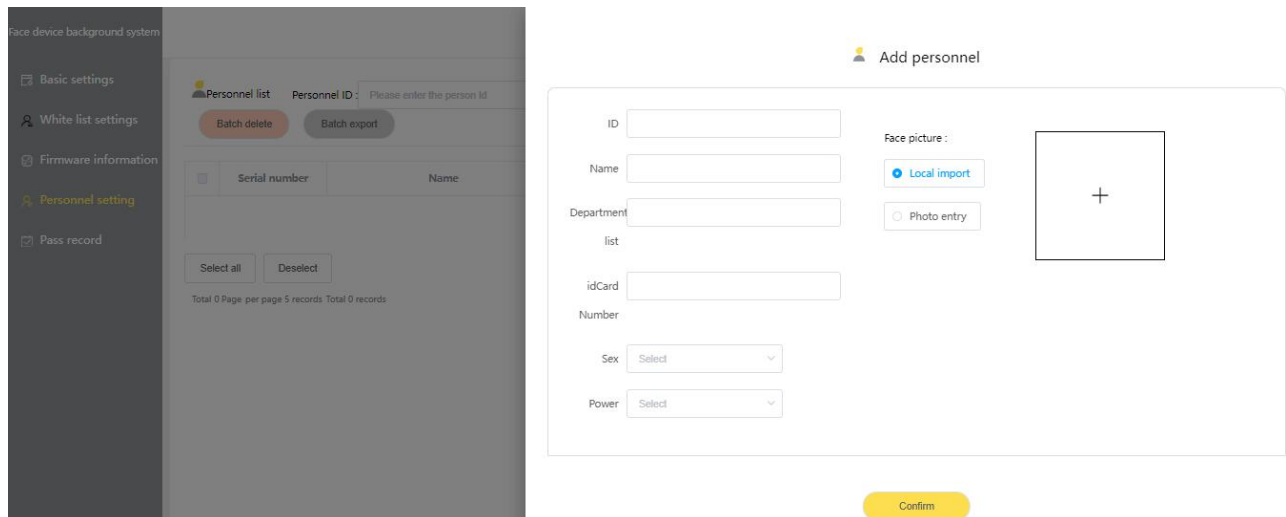
Reset Device



Enter the device password and click "OK". The device will be restored to its factory settings.

7.4. Personnel Settings

Add Personnel



The screenshot shows the 'Add personnel' interface. On the left is a sidebar with the following menu items: 'Basic settings', 'White list settings', 'Firmware information', 'Personnel setting' (highlighted), and 'Pass record'. The main area is titled 'Add personnel' and contains a 'Personnel list' section with a 'Personnel ID' input field and 'Batch delete' and 'Batch export' buttons. Below this is a table with columns 'Serial number' and 'Name', and buttons 'Select all' and 'Deselect'. At the bottom of the table, it says 'Total 0 Page: per page 5 records Total 0 records'. The right side of the form has input fields for 'ID', 'Name', 'Department', 'list', 'idCard', and 'Number'. There are also dropdown menus for 'Sex' and 'Power'. To the right of these fields are two radio buttons: 'Local import' (selected) and 'Photo entry'. Further right is a box labeled 'Face picture' with a plus sign inside. At the bottom right is a yellow 'Confirm' button.

Local Import

After filling in the personnel ID and name (department, gender, and permission are optional), click "Local Import", and then click the plus sign in the right box to import the face photo.

Take Photo and Import

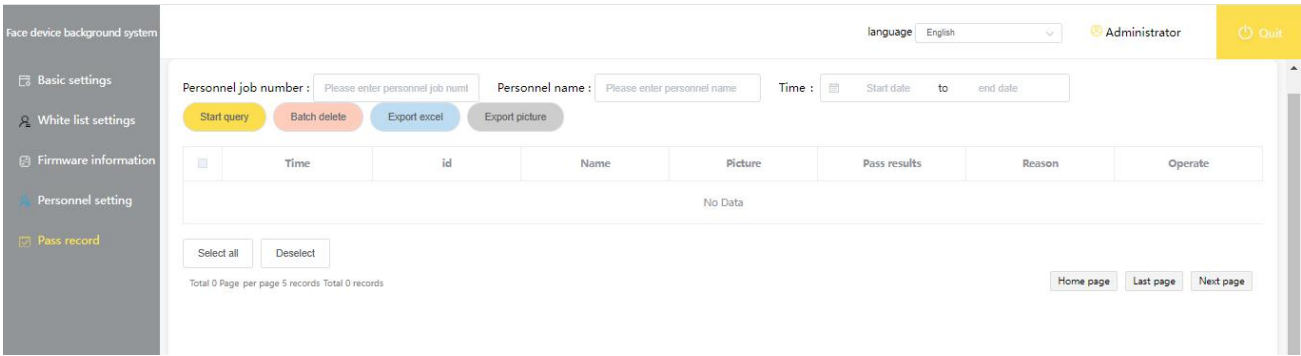
After filling in the personnel ID and name (department, gender, and permission are optional), click "Take Photo and Import", and the device will enter the photo - taking mode. When an employee brushes their face, the device will complete the registration successfully.

Batch Import

Download the form template, fill it out, and then import the form.

7.5. Pass Records

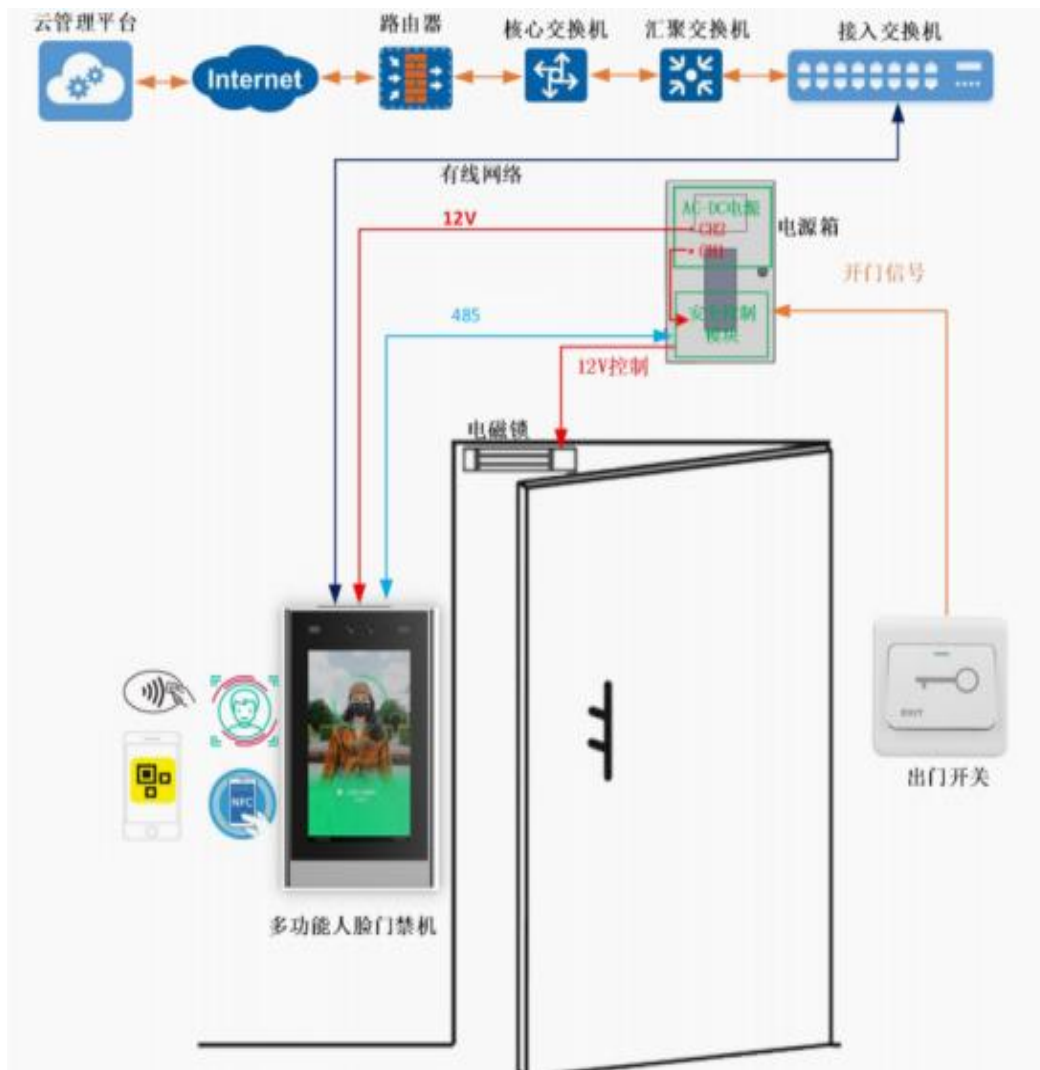
This item is used to query, delete pass records, and export pass record forms.



8.Application Scenario Instructions

8.1. Stand - alone Use

This scenario mainly depends on the network. The device is connected to the server through the network to achieve online verification.

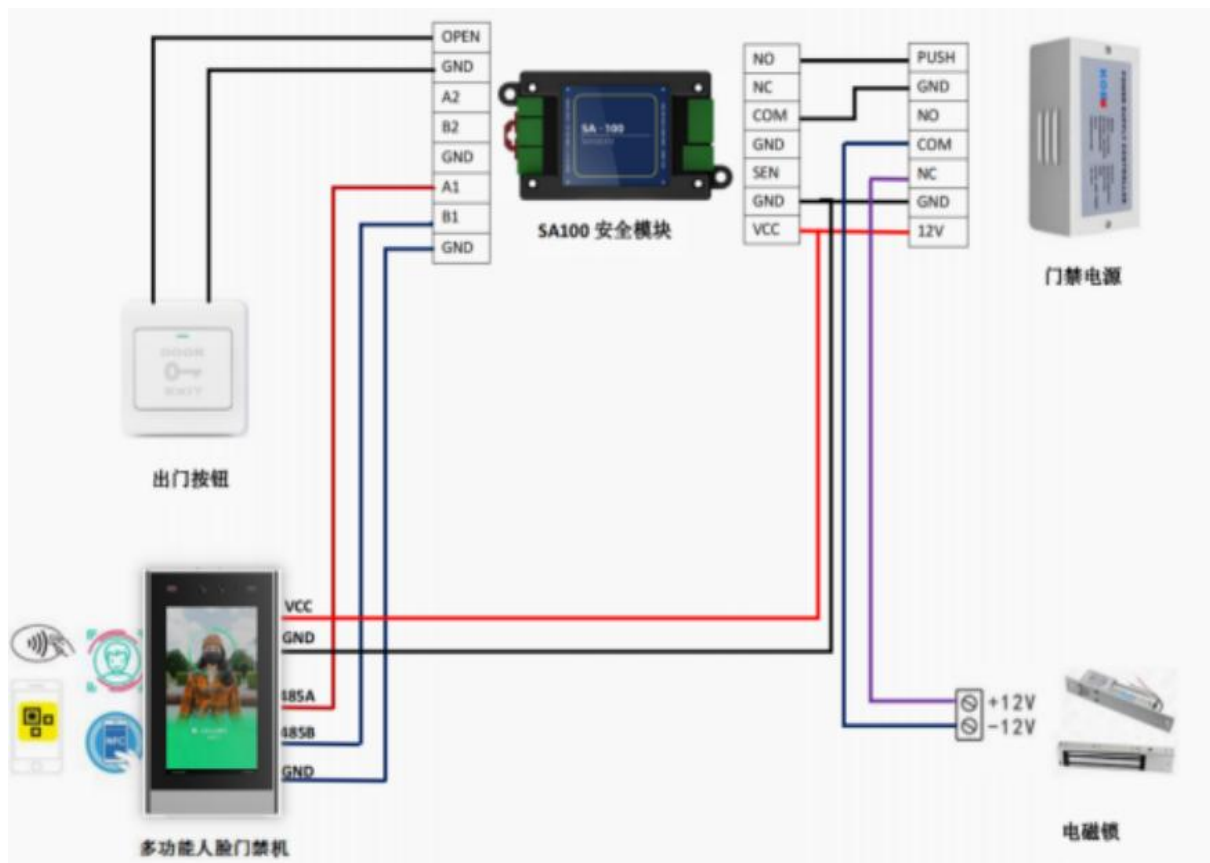


Operation Analysis:

- ① The device is connected to the server management software through the network port and requires online permission verification.
- ② The exit switch is connected to a professional access control power supply (or can be connected to the device as an option) to achieve indoor door - opening by pressing.
- ③ The device is connected to a professional access control power supply.
- ④ The electromagnetic lock is connected to a professional access control power supply. After the access permission of the passing personnel is verified, the door lock opens.

8.2. In Collaboration with the Security Module

In this scenario, the VF203 face recognition all-in-one machine and the security module form a more secure access control system. The VF203 is connected to the server through the network for online verification, and then communicates with the security module through the encrypted 485 protocol to achieve door lock control. A typical application is shown in the following figure. For more security applications, please refer to the SA100 product manual.



9. Precautions

Face Registration Photo Requirements

Face Pixel: The minimum pixel is 80, and the maximum is 512.

Image Size: Ranges from 50 to 300K.

Image Aspect Ratio: Width should be between 512 and 800, and height between 640 and 1024.

Image Format: JPG.

Background Requirements: Use casual photos without beauty filters, heavy makeup, sunglasses, scarves, masks, or other items that may cover the face.

Face - brushing Registration Requirements

When registering by face - brushing, the face should be centered within the registration frame, ideally filling the entire frame. Look straight at the registration frame for 2 - 3 seconds and wait for the device to complete the registration process.

Wiring Requirements:

Insulation treatment must be carried out on unused pins. If the device is damaged due to a short - circuit caused by the lack of insulation treatment, the user will be responsible for the consequences.

Installation Environment Requirements

Avoid installing the device in areas with backlight, direct sunlight, sunlight shining directly through windows, sunlight shining obliquely through windows, or close - range lighting. These lighting conditions can affect the performance of face recognition. Also, strong sunlight can interfere with the temperature - measuring module when the device is exposed to it.

