Intelligent Face Recognition Terminal
FCV4906 Product Manual

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1.Introduction

Thank you for choosing the FCV4906 Face Recognition All-in-One Device. Carefully reading this document will help you understand the device's functions, features, and quickly master its operation and installation procedures.

1.1. Product Introduction

The FCV4906 is equipped with a 4-core 64-bit Cortex-A55 processor, boasting a maximum clock speed of 2.0GHz and a 1TOPS NPU. It runs on Android 11 or later, with 2GB/4GB of RAM and 16GB of storage (expandable to 32GB/64GB). The device integrates multiple functions, including face recognition (supporting up to 100,000 face templates with a recognition accuracy of over 99%), access control management, door access control, face payment, card swiping, and QR code scanning. It offers five communication methods: RS485, RS232, Ethernet, Bluetooth and WiFi.

Key features of this product include an 8-inch touchscreen and voice broadcast, ensuring excellent interactivity and user-friendliness. Additionally, an Android SDK is provided to support secondary development. The FCV4906 is suitable for use in industrial parks, office buildings, banks, schools, and other scenarios.

1.2. Product Features

- 4-core 64-bit Cortex-A55, maximum clock speed 2.0GHz, 1TOPS NPU
- System: Android 11
- 8-inch high-brightness LCD touchscreen, face recognition, real-time voice broadcast prompts
- Face database capacity: up to 100,000 templates; recognition accuracy: $\geqslant$99% (full database); recognition speed: $\leqslant$0.3 seconds per person
- Recognition distance: 0.3－1.5m
- Equipped with 2MP dual cameras (RGB + IR)
- Supports wide dynamic range recognition (dynamic range >80dB)
- Effective recognition for personnel wearing masks, glasses, or hats; mask detection supported
- Built-in silent liveness detection (effectively resists photo, video, and mask attacks)
- Network options: WiFi / Ethernet
- SDK provided for secondary development

- External inputs: alarm, door contact status, exit button
- 1x RS485/RS232 interface (compatible with access control controllers)
- Built-in high-precision clock chip and RTC battery (time retention during power outage)
- ESD protection: ±8kV (contact), ±10kV (air)
- Standard IP66 dustproof and waterproof rating
- Customization support: logo, protocol, OEM services
- Installation options: turnstile, 86-type junction box, wall-mounted, pole-mounted

1.3. Technical Parameters

Category	Configuration/Feature	Description/Specifications
Overall Unit	Product Type	Face Recognition, Access Control, Door Access Terminal, Face Payment, Card Swiping, QR Code Scanning
	Product Model	FCV4906
	Main Chip	4-core 64-bit Cortex-A55
	Clock Speed	2.0GHz
	Operating System	Android 11
	Processor Computing Power	1TOPS
	RAM	2GB/4GB
	Storage	16GB (expandable to 32GB/64GB)
	System Boot Time	≤60 seconds
	Working Voltage	9 – 24V (12V recommended)
	Power Consumption	17W (Max)
Appearance	Material	CNC-machined Aluminum Alloy
	Surface Treatment	Anodization
	Color	Silver
External Interfaces(Extended Cables)	Electrical Interfaces	Power Supply, 30V/1A Relay, Ethernet, RS485/RS232, Alarm Input, Door Contact Input, USB*2
	Physical Interfaces	8P8C RJ45, 5525 DC Barrel Jack, 3.5mm Screw Terminal, USB-A Female Port
Network/Wireless	Ethernet	10/100M Ethernet
	WiFi/Bluetooth	WiFi 2.4G/BT 4.2Wi-Fi Connection Method: Same as Android phones – Pull down the control panel from the top of the screen, press and hold the Wi-Fi icon to enter the Wi-Fi settings page (Wi-Fi list displayed). Select the target network, enter the password, and complete the connection.
Face Recognition	Camera Specification	19201080 RGB Recognition, 19201080 IR Liveness Detection Dynamic Range >80dB
	Recognition Mode	Configurable switch between 1:N and 1:1 recognition
	Recognition Time	≤300ms
	Recognition Distance	0.3 – 1.5m
	Face Database Capacity	100,000 templates
	Recognition Accuracy	≥99% (when face database reaches 100,000 templates)
	Light Adaptability	Adaptable to direct sunlight and complete darkness environments
	Face Enrollment Methods	1) Batch import via PaaS platform2) Batch import via USB flash drive

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Overall Protection	Dustproof & Waterproof	IP66 (excludes external modules)
	ESD Protection	±8kV (contact), ±10kV (air)
	Surge Protection	Power Supply/Ethernet/RS485: Differential Mode 0.5kV, Common Mode 1kV
Environmental Characteristics	Operating Temperature	Commercial-grade chip: 0－55℃; Industrial-grade chip optional
	Storage Temperature	-40－80℃
	Humidity	10%－90% (non-condensing, typical)
Human-Machine Interaction	LCD	8-inch LCD Touchscreen
	TP (Touch Panel)	Capacitive Touch, 5-point Touch Support
	Voice Interaction	Built-in 8Ω 1W Speaker / TTS Supported
Others	Configuration Methods	Tool Platform, Touchscreen
	Environmental Compliance	RoHS
	Application Scenarios	Indoor & Outdoor
	Sunshade Cover	Sheet Metal Sunshade Cover (Painted, White)
Installation Methods	Desktop	Compatible with Standard Desktop Stand
	Wall-Mounted	Supports 86-type Junction Box, Flat Wall Installation; Cable Tray Reserved
	Turnstile/Pole-Mounted	Equipped with Torch-Style Bracket (Supports Turnstiles & Poles)
Power Adapter	Power Adapter Specification	12V/3A Power Adapter
Card Swiping Module	Antenna Specification	13.56MHz
	Antenna Size	42mm × 28mm
	Reading Distance	0－5cm (varies by card type and specification)
Supported Card Types	Compatible Card Models	S50, S70, FM1208, FM1216-137, MIFARE CLASSIC EV1 4K (S70), MIFARE Desfire EV2 D42, UL, FM1208 1K+7K, NTAG216, Ultralight C, UL EV1, DESFIRE EV2 D41, Ultralight EV1, MIFARE Desfire EV2 D82
	NFC Usage Instructions	NFC cards can be added via the device's web server interface: Access the web server, navigate to the NFC Management page, and register a new NFC card. After successful addition, tap the card on the NFC sensing area below the device screen for authentication.
QR Code Scanning Module	Supported Code Types	QR Code, PDF417, EAN-8, EAN-13, ISBN-10, CODE39, CODE93, CODE128, UPCA, UPCE, ITF, Aztec, etc.
	Scanning Media	Mobile Phone Screens / Paper
	Image Sensor	640 × 480
	Reading Direction	360°
	Scanning Angle	Horizontal: 75.4°, Vertical: 61.7°, Field of View (FOV): 88.7°
	Reading Precision	≥7mil
	Reading Speed	50ms per scan (average), supports continuous scanning
	Reading Depth of Field	15.47－185.97mm (12-version 15mil paper code) 28.26－282.14mm (12-version 15mil mobile phone code)
	Scanning Feedback	Buzzer Alert

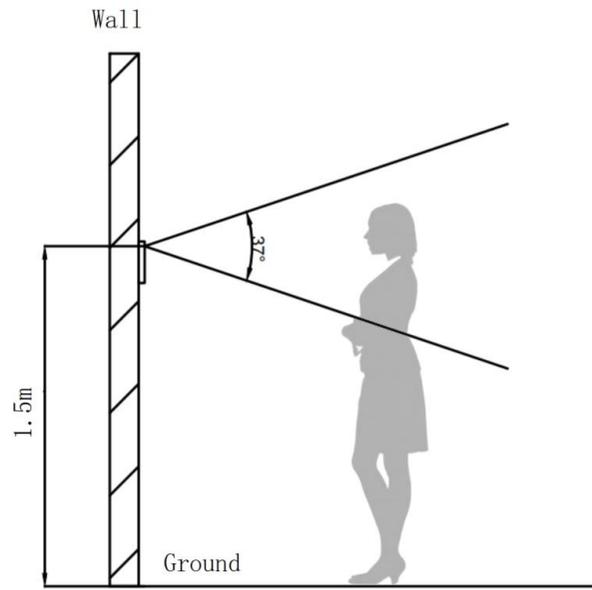|		
	Motion Performance	0.260 m/s
	Ambient Illumination	0 – 80,000 Lux

2.Product Appearence

2.1. Appearance Diagram

2.2. Exterior Dimension Diagram
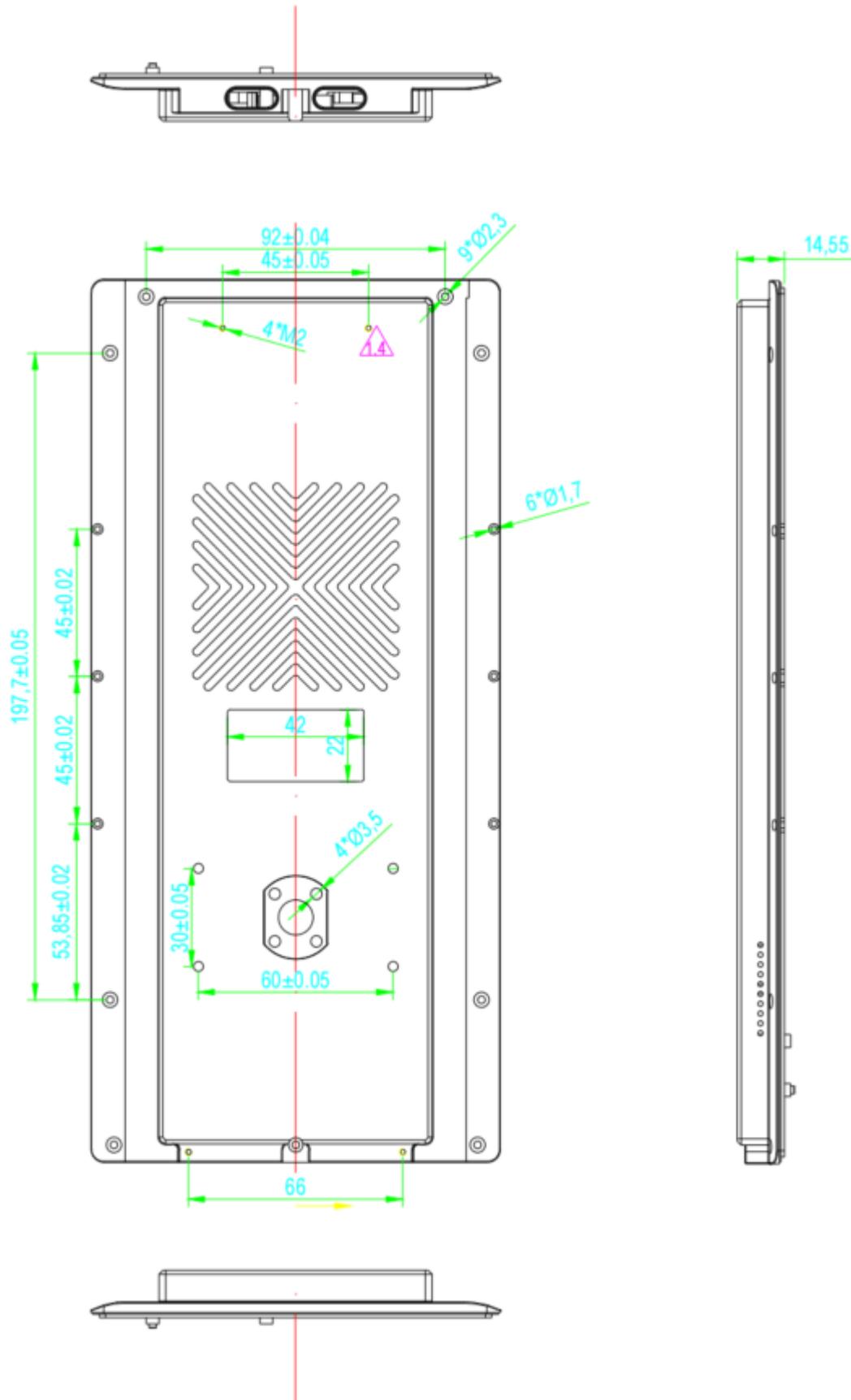
2.3. Diagram of Reading Area

Wall

37°

1.5m

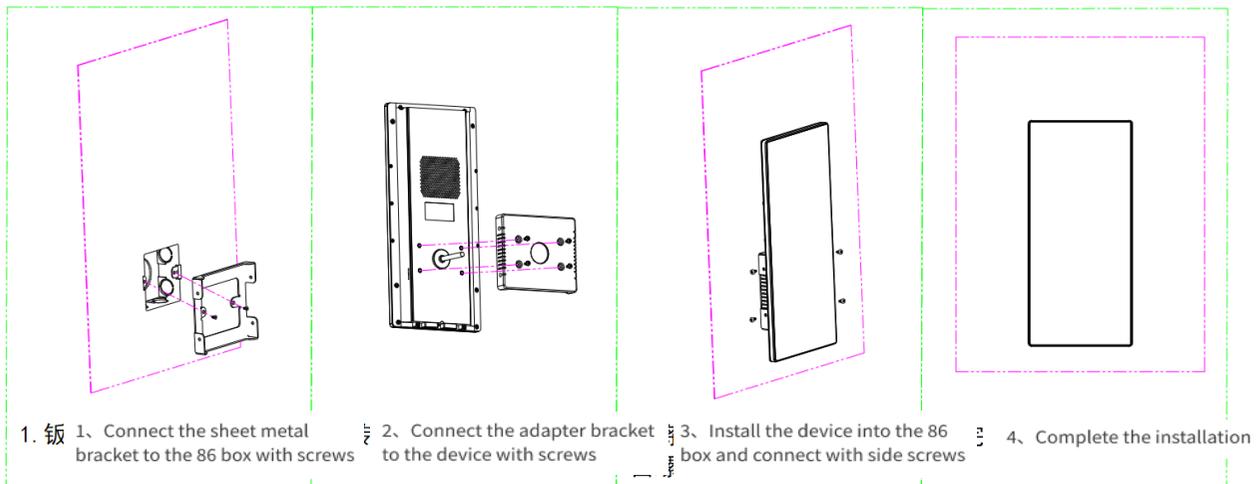Ground

Side View

Wall

Recognition area

1.2m

0.3m

56°

User
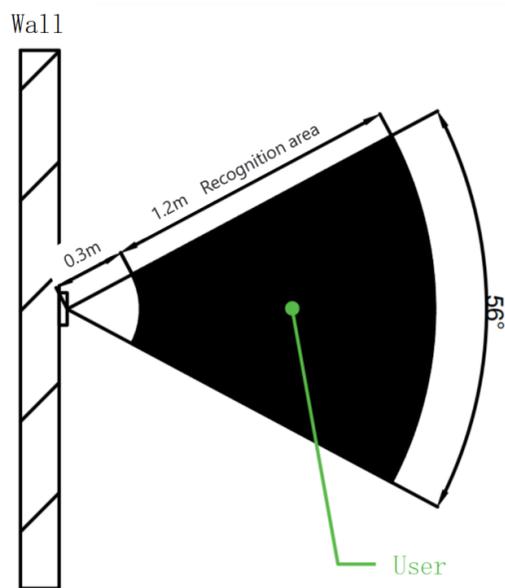
Top View

2.4. Installation Method

For 86-Box Installation Scenarios

1、Connect the sheet metal bracket to the 86 box with screws

2、Connect the adapter bracket to the device with screws

3、Install the device into the 86 box and connect with side screws

4、Complete the installation

For Gate Installation Scenarios

1. The diameter of the opening on the gate panel is 34mm.

2. Remove the torch holder nut.

3. Secure the panel to the torch holder and connect the wire terminals.

4. Assemble the panel onto the gate to complete the installation.
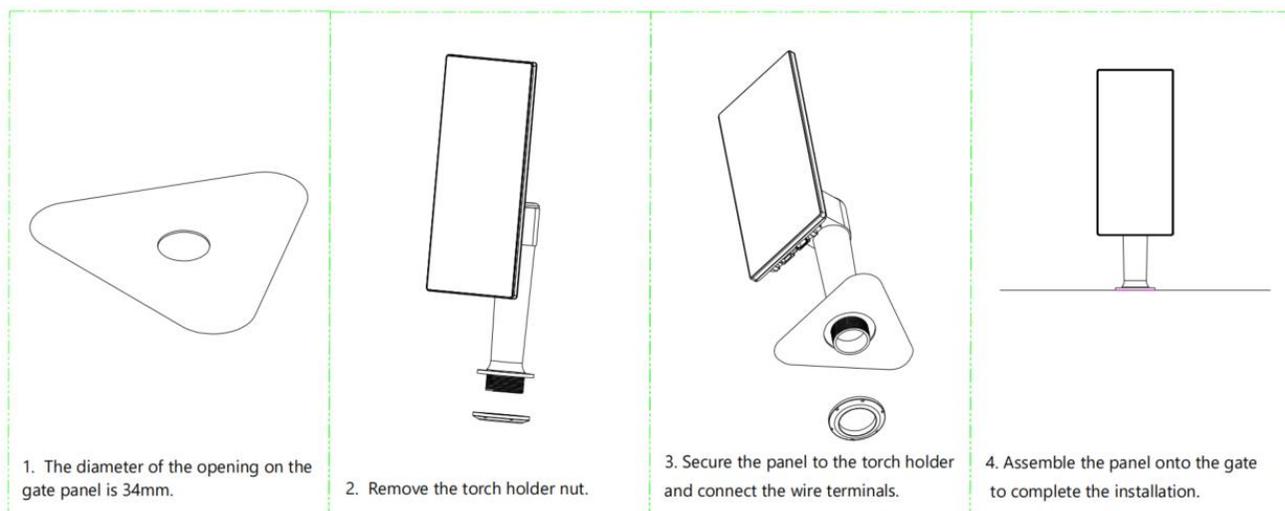
For Column Installation Scenarios

1. Remove the upper cover of the column.

2. Remove the torch holder nut.

3. Secure the upper cover to the torch holder.

4. Assemble the upper cover onto the column to complete the installation.
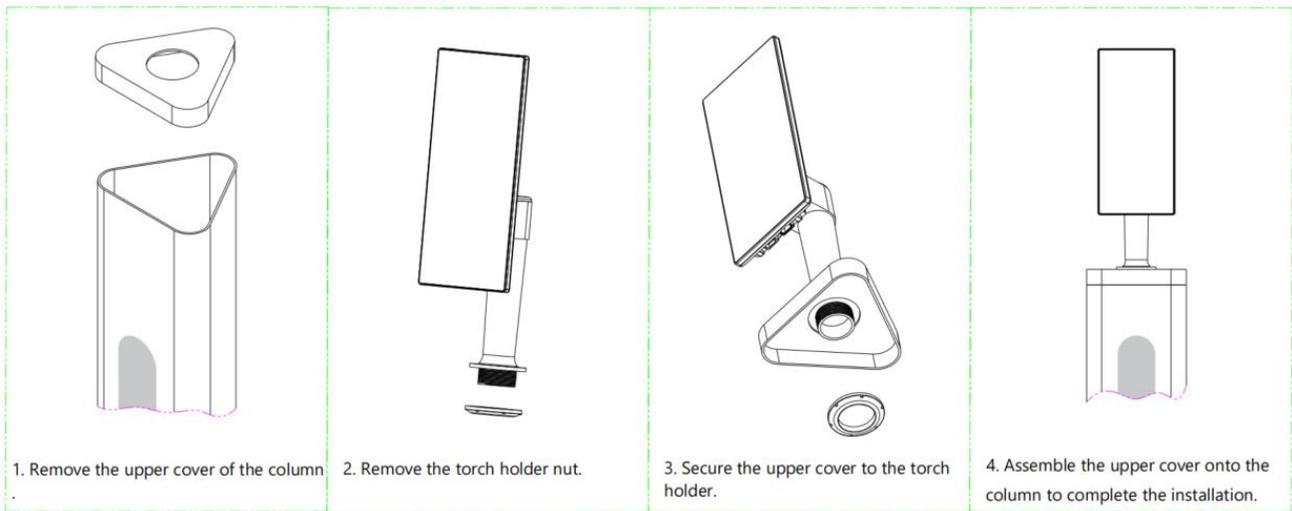
Installation Method of Light Shield

1、Align the screw holes of the light shield with the copper nuts on the outer shell
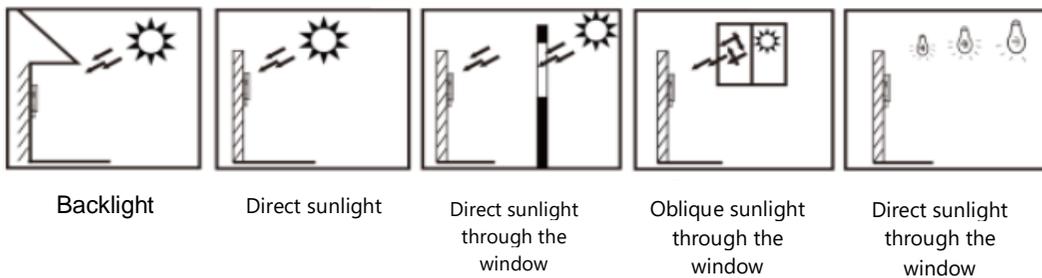
2、Tighten the light shield with M2 screws
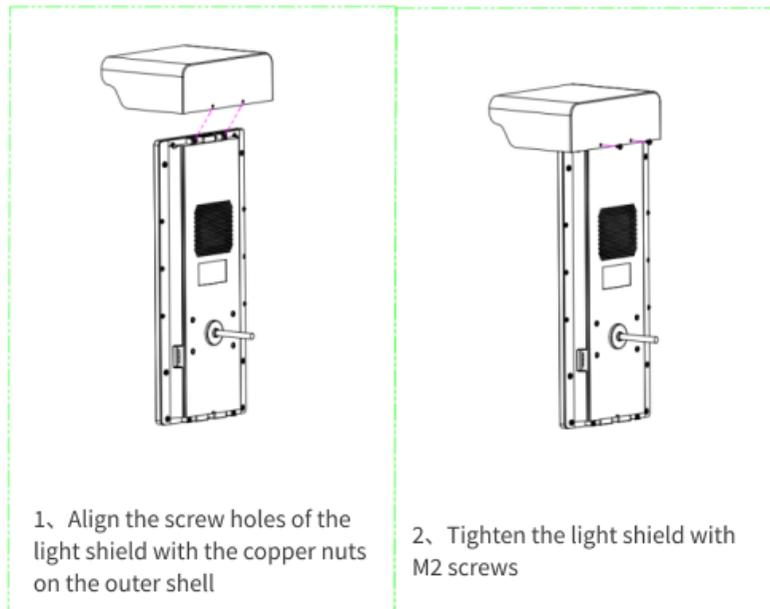
Installation Precautions:

Avoid backlighting, direct sunlight, direct sunlight through windows, oblique sunlight through windows, and close-range lighting.

Backlight

Direct sunlight

Direct sunlight through the window

Oblique sunlight through the window

Direct sunlight through the window

2.5. Device Wiring

Port Description

    The face recognition device has three terminal blocks. Please wire according to the definition marked on the terminal blocks.
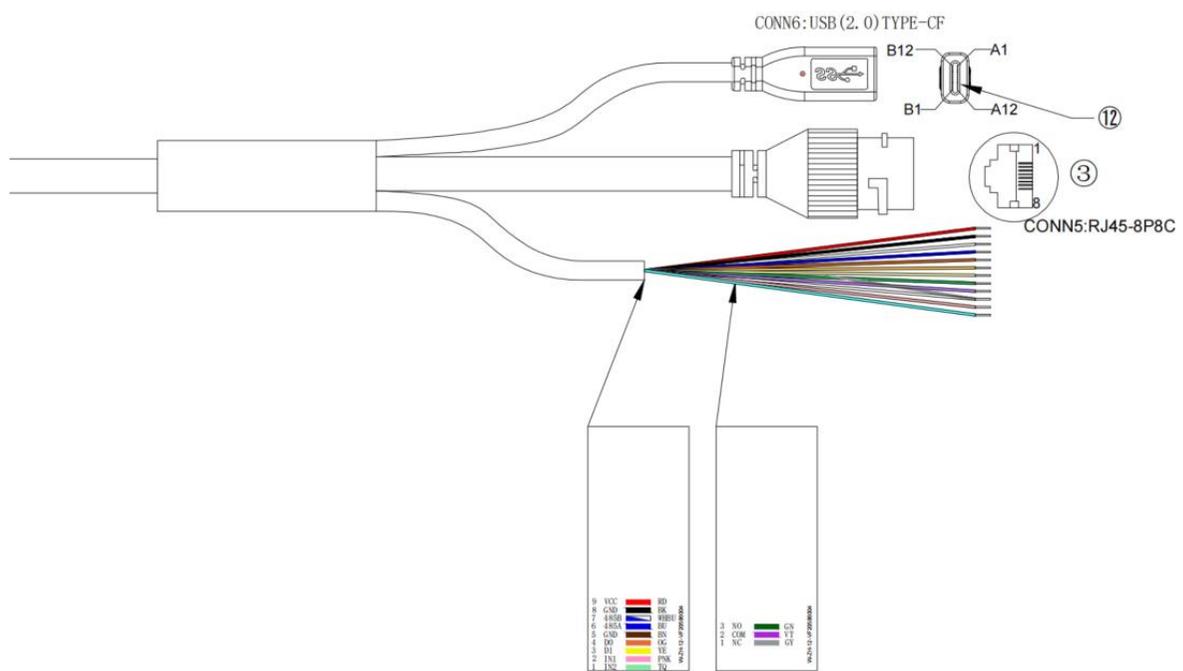
Port Name	Specification/Pin Number	Pin Definition
USB (2.0)	TYPE-CF	Data Transmission
Network Interface	RJ45	Connect Network Cable
Power Supply	9	**VCC** (Power Supply Positive Terminal)
	8	**GND** (Power Supply Negative Terminal/Ground)
RS485	7	**485B** (RS485 Communication Signal Line B)
	6	**485A** (RS485 Communication Signal Line A)
	5	**GND** (Ground)
Wiegand	4	**D0** (Wiegand Signal Line 0)
	3	**D1** (Wiegand Signal Line 1)
Door Contact Input	2	**IN1** (Door Contact Signal Input Terminal 1)
	1	**IN2** (Door Contact Signal Input Terminal 2)

Relay	3	**NO**: Normally Open Terminal (Relay)
	2	**COM**: Common Terminal (Relay)
	1	NC: Normally Closed Terminal (Relay)

Notes

Unused pins must be insulated!

**   If the device is damaged due to a short circuit caused by failure to insulate unused pins, the user shall bear full responsibility.**

3.Precautions

Requirements for Face Registration Photos

Face pixels: Minimum 80, maximum 512
Image size: 50–300K
Image dimensions: Width 512–800, height 640–1024
Image format: JPG
Background requirements: Should be a daily life photo; no beauty filters, heavy makeup, or obstructions such as sunglasses, scarves, or masks.

Requirements for Face-swiping Registration

During face-swiping registration, the face must be within the registration frame, preferably filling the entire frame. Maintain eye contact with the registration frame for 2–3 seconds and wait for the device to complete registration.

Wiring Requirements

Unused pins must be insulated!
If device damage occurs due to short circuits caused by failure to insulate unused pins, the user shall bear full responsibility.

4.FCC Warning Statement

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

--Reorient or relocate the receiving antenna.

--Increase the separation between the equipment and receiver.

-- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

--Consult the dealer or an experienced radio/TV technician for help.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation.

RF Exposure Statement

To maintain compliance with FCC's RF Exposure guidelines, This equipment should be installed and operated with minimum distance of 20cm the radiator your body. This device and its antenna(s) must not be co-located or operation in conjunction with any other antenna or transmitter.