

Intelligent Face Recognition Terminal

FCV5005 Product Manual



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1. Introduction

Thank you for choosing the FCV5005 Face Recognition Device. Carefully reading this document will help you understand the device's functions, features, and quickly master its usage and installation methods.

1.1. Product Overview

The FCV5005 adopts the Linux operating system with a storage capacity of 8GB, expandable to 16GB/32GB. It supports multiple communication methods including RS485, Wiegand, WIFI, and Ethernet. Face recognition is performed through local verification; face data is stored locally on the device. After successful verification, the personnel ID can be output using one of the aforementioned three communication methods.

Key features of this product include an 8-inch touchscreen and voice broadcast, ensuring excellent interactivity and ease of use.

The FCV5005 device supports a protocol mode, allowing users to conduct secondary development based on the "Communication Protocol" provided by our company.

1.2. Product Features

- 8-inch high-brightness LCD touchscreen, real-person voice broadcast prompts, and 2-megapixel dual cameras.
- Recognition accuracy of over 97% with a full face database, and recognition time < 0.3 seconds per person.
- Recognition distance of 0.3m-1.5m, supporting a maximum of 50,000 face entries and 50,000 access records.
- Effective recognition of personnel wearing masks, glasses, or hats, with mask detection support.
- Built-in silent liveness detection to effectively block attacks using photos, videos, and masks.
- Supports TCP/IP, MQTT, and HTTP protocols.
- Support two-channel pin input
- Outputs face ID via RS485 and Wiegand.
- Built-in high-precision clock chip and RTC battery to maintain time during power outages.

- ESD protection: 8KV contact, 12KV air.
- IP66 dust and water resistance rating for standard models without additional modules.
- Supports logo customization, protocol customization, and OEM services.
- Compatible with turnstile, 86-box, wall-mounted, and column-mounted installations.

1.3. Technical Parameters

Technical 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 Touchscreen	
	Resolution: 800*1280	
Communication Methods	Wired: 1-channel 10/100M Adaptive Ethernet Port	
	Wireless: 2.4G WiFi	
	Wi-Fi Connection Method:Use the network configuration option in the device settings. Enter the Wi-Fi SSID and password on the device screen to establish a successful connection.	
	1-channel RS485	
	1-channel Wiegand 26/Wiegand 34	
Physical Interfaces	Relay: 30V1A	
	2-channel Alarm Signal Input Interfaces	
Power Supply	Supply Voltage: 9~24V(DC) (12V Recommended)	
	Max Power Consumption: 11.3W	
Cameras	RGB Camera	Field of View: D=63° H=56° V=37°
		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: 2.56MM
Speaker	Built-in 1-piece 4Ω 2W Speaker	
Material	Aluminum alloy shell + Organic Glass	
Operating Temperature	-20°C~55°C	
Operating Humidity	10%~90% (No Condensation)	
Protection Level	ESD Protection: 8KV Contact, 12KV Air	
	Dust and Water Resistance: IP66 for for standard models without additional modules	
Face Recognition Performance Parameters	Mask Detection Support	
	1:N Algorithm Dynamic Face Detection (Anti-photo, Anti-video Attack)	
	Hardware Infrared Liveness Detection (Anti-photo, Anti-video Attack)	
	Face Capacity: 50,000 Entries	
	Recognition Distance: 0.3-1.5M	
	Pass Rate: ≥97% (When Capacity Reaches 50,000 Entries)	
	False Acceptance Rate: ≤0.01% (When Capacity Reaches 50,000 Entries)	

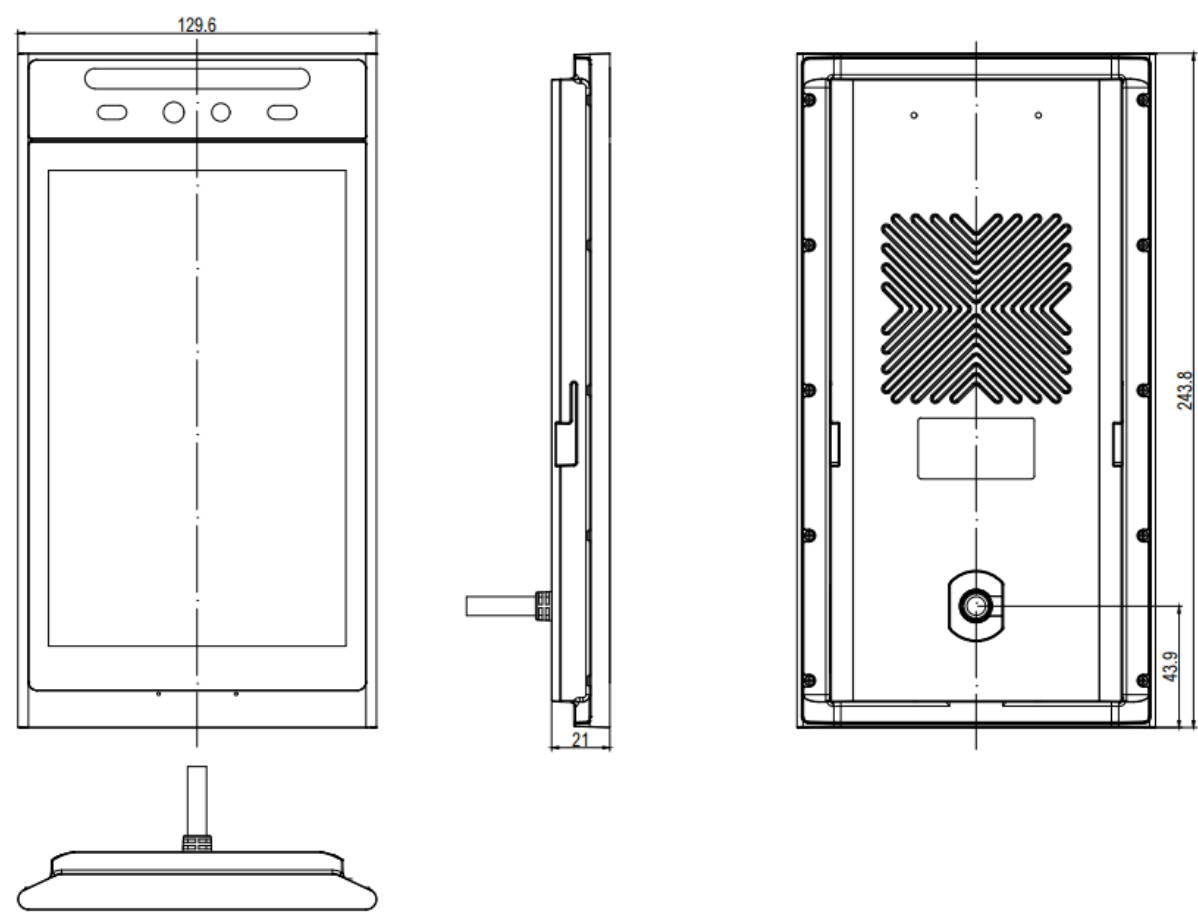
	Recognition Time: <0.3s
Antenna Specification	13.56MHz
Antenna Size	48mm*33mm
Card Reading Distance	0-5cm (may vary with card types and specifications)
Supported Card Types	S50, S70, FM1208, FM1216-137, MIFARE CLASSIC EV1 4K (S70), mifare desfire ev2 d42, UL, FM1208 1K+7K, NTAG216, ultralight c, UL EV1, DESFIRE EV2 d41, Ultralight EV1, Mifare Desfire ev2 d82.
NFC Usage Instructions	NFC cards can be added through the device' s web server interface. Access the web server, navigate to the NFC management page, and register a new NFC card. Once the card has been successfully added, it can be used for authentication by tapping it on the NFC sensing area located on the lower half of the screen.

2. Product Appearance

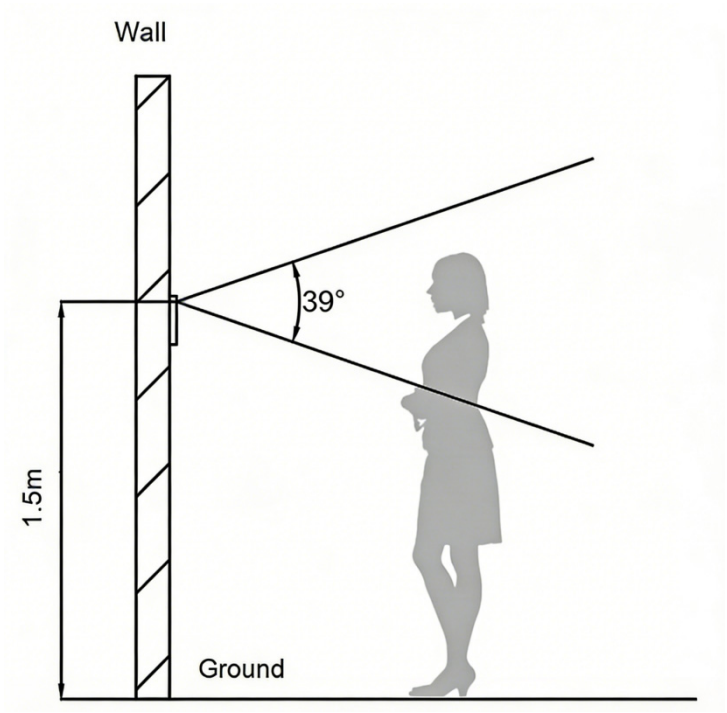
2.1. Appearance Diagram



2.2. Exterior Dimension Diagram



2.3. Diagram of Reading Area

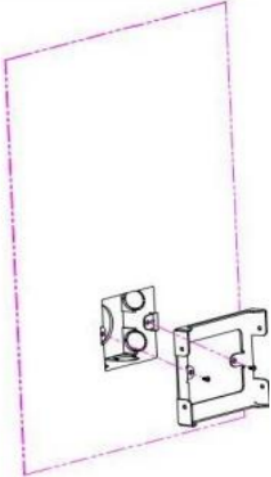
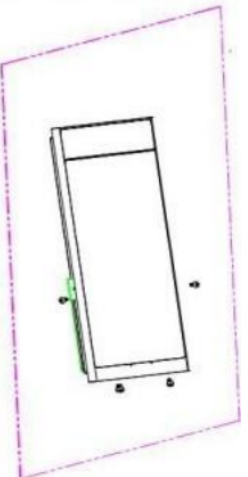
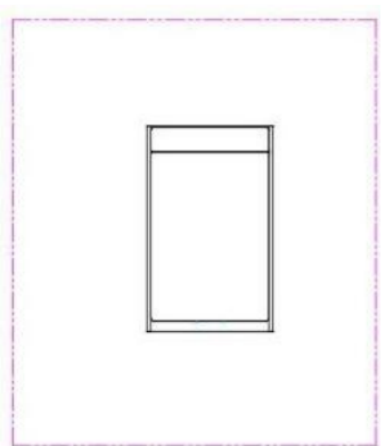


Side View

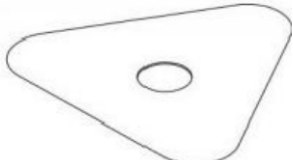
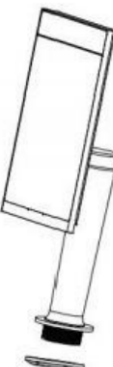
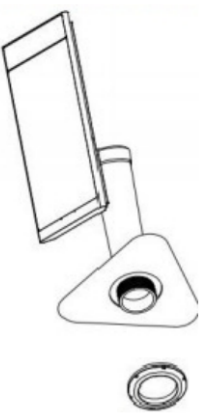
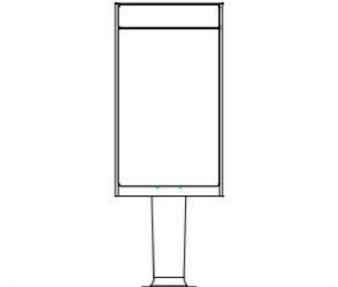
Top View

2.4. Installation Method

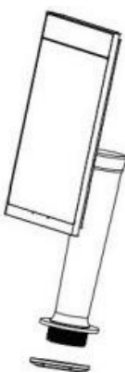
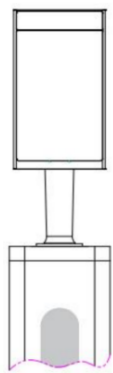
For 86-Box Installation Scenarios

		
1. Secure the sheet metal bracket to the 86-type box using screws.	2. Mount the device onto the 86-type box, then fasten it with side screws.	3. Installation is complete.

For torch holder installation scenarios

			
1. Drill a hole with a diameter of 34mm on the turnstile panel.	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 turnstile; installation is complete.

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 and connect the wire terminals.	 4.Assemble the upper cover back onto the column; installation is complete.
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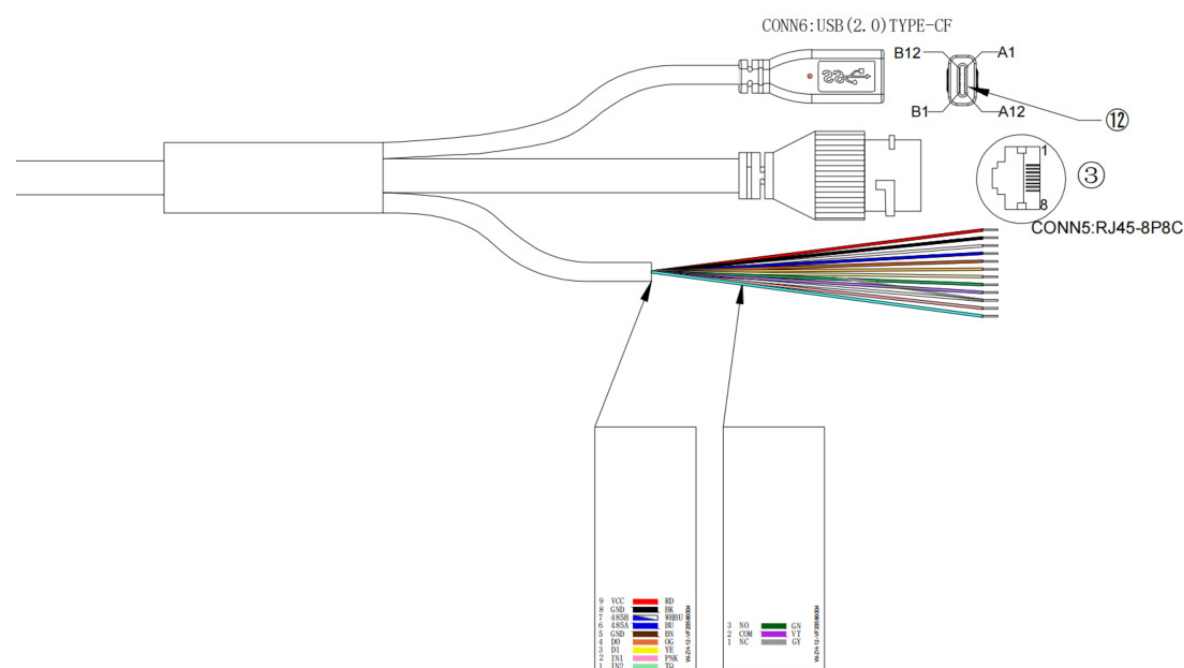
Installation Precautions:

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

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 radiocommunications. 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.