

Intelligent Face Recognition Terminal

FCV5003 Product Manual



Table of Contents

1. Introduction	2
1.1. Product Overview	2
1.2. Product Features	2
2. Product Structure	4
2.1. Appearance Renderings	4
2.2. Product Dimension Drawing	5
2.3. Installation Methods	5
2.3.1 For 86-Box Installation Scenarios	5
2.3.2 For torch holder installation scenarios	6
2.3.3 For Column Installation Scenarios	6
2.4. Interface Description	7
3. Technical Specifications	8
4. Precautions	10
4.4.1 Requirements for Face Enrollment Photos	10
4.4.2 Face Enrollment Requirements	10
4.4.3 Wiring Requirements	10
4.4.4 Installation Environment Requirements	10
4.4.5 Diagram of Reading Area	12
5. FCC Warning Statement	13

1.Introduction

Thank you for using the FCV5003 Face Recognition Device. Carefully reading this document will help you understand the device's functions and features, as well as quickly master its usage and installation methods.

1.1.Product Overview

The FCV5003 adopts the Linux operating system with a storage capacity of 8GB, which can be expanded to 16GB/32GB. It supports multiple communication methods including RS485, Wiegand, WIFI, and Ethernet. Face recognition can adopt the local whitelist verification method, where the face database is stored locally on the device. After successful verification, the personnel ID can be output through one of multiple output methods.

This product is characterized by a 7 - inch touch screen and voice broadcast, offering excellent interactivity and ease of use.

The FCV5003 device supports the protocol mode, and users can conduct secondary development based on the "Communication Protocol" provided by our company.

1.2.Product Features

- ✓ 7 - inch high - brightness LCD touch screen, real - person voice broadcast prompts, and 2MP binocular cameras.
- ✓ Recognition accuracy of over 97% in a full database, with a recognition time of less than 0.3 seconds per person.
- ✓ Recognition distance ranges from 0.3m to 1.5m, supporting a maximum of 3,000 face databases.
- ✓ Effective recognition of personnel wearing masks, glasses, or hats, with mask detection support.
- ✓ Built - in silent liveness detection to effectively resist attacks using photos, videos, and masks.

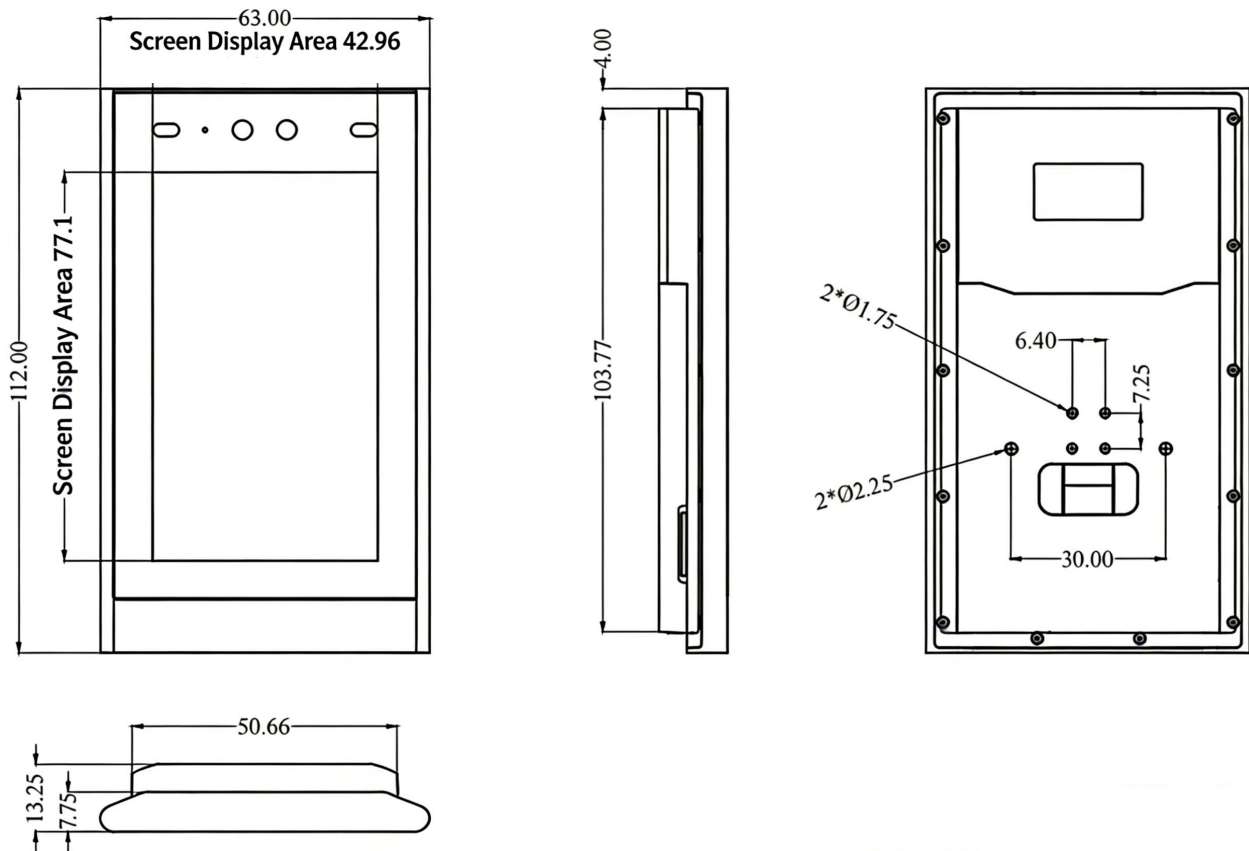
- ✓ Support for TCP/IP, MQTT, and HTTP protocols.
- ✓ RS485 and Wiegand output of face ID numbers, with customizable output.
- ✓ Built - in high - precision clock chip and RTC battery to retain time when power is off.
- ✓ ESD protection: 8KV for contact and 12KV for air.
- ✓ Support for logo customization, protocol customization, and OEM.
- ✓ Suitable for turnstile, 86 - box, wall - mounted, and column mounting.

2.Product Structure

2.1. Appearance Renderings

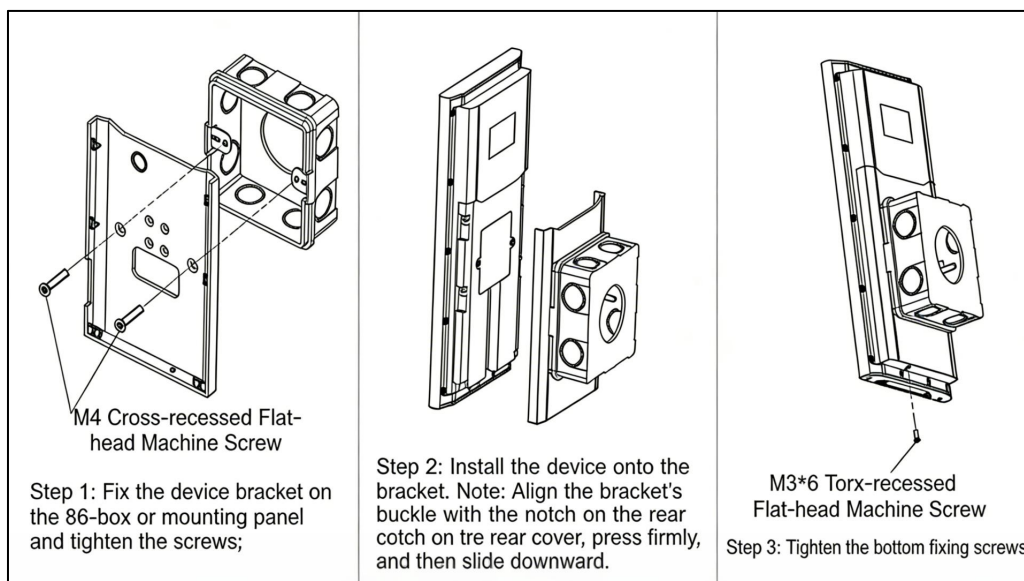


2.2. Product Dimension Drawing

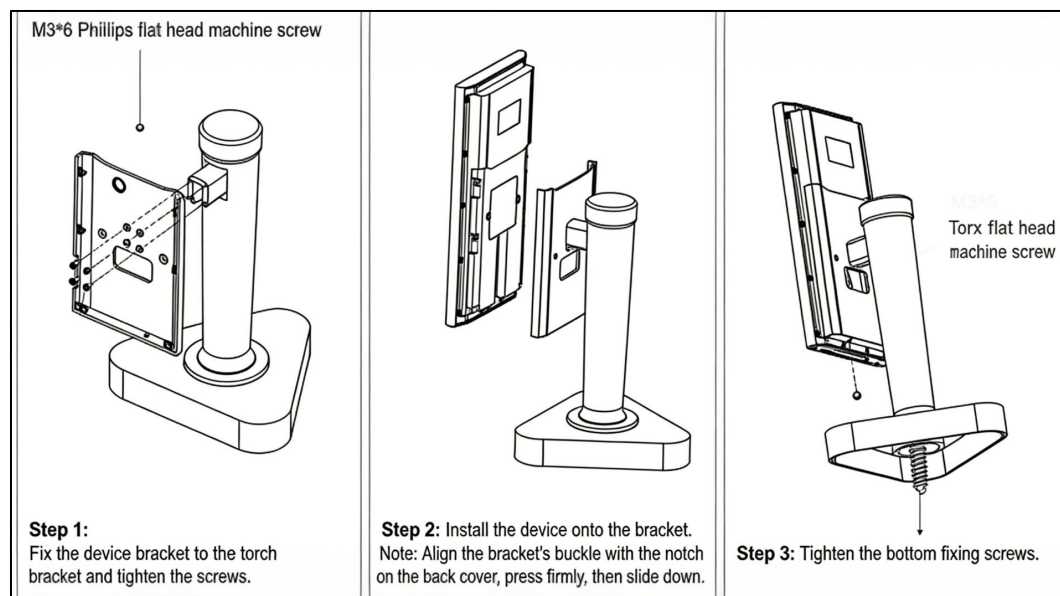


2.3. Installation Methods

2.3.1 For 86-Box Installation Scenarios



2.3.2 For torch holder installation scenarios



2.3.3 For Column Installation Scenarios

Step 1: Secure the device bracket to the torch holder, then tighten the screws.

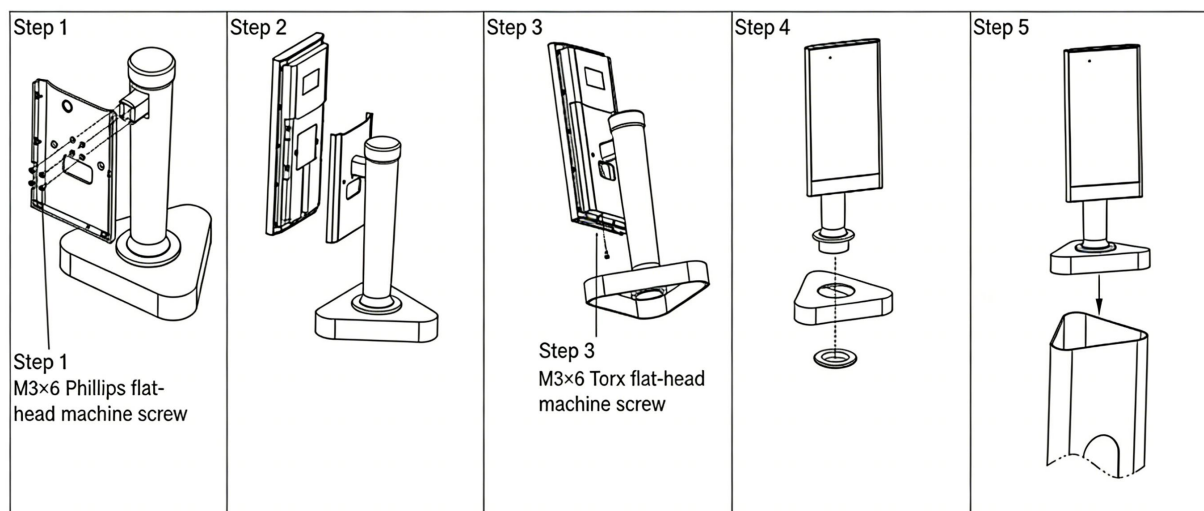
Step 2: Mount the device onto the bracket.

Note: Align the bracket's clasp with the notch on the back cover, press firmly, then slide downward.

Step 3: Tighten the fixing screw at the bottom.

Step 4: Install the base of the torch holder and tighten the nut.

Step 5: Secure the torch holder to the column.



2.4. Interface Description

The output interface adopts PHB2*10P terminal with half-stripped wires and standard 100 Mbps Ethernet port. It can connect to power supplies, electromagnetic locks, Wiegand control devices, RS-485 control devices, etc. Wiring must be performed in accordance with the definitions specified on the terminal wire labels.

The wire label specifications are as follows:

No.	Wire Label Description	Wire Color
1	NC2	Green-white
2	NO1	Orange-white
3	COM2	Red-white
4	COM1	Brown-white
5	NO2	Black-white
6	NC1	Cyan (Light green)
9	485A	Pink
11	485B	White
12	GND	Gray
13	WG_D1	Purple
14	GND	Blue
15	WG_D0	Green
16	GND	Yellow
17	IN2	Orange
18	GND	Black
19	IN1	Brown
20	12V	Red

3. Technical Specifications

System Parameters	Operating System	Linux
	Built-in Storage Capacity	8GB
	CPU	Dual-core Cortex A7 @ 1GHz
	NPU	NPU @ 0.6T
Screen Parameters	Size	7 inches
	Operation Method	Touch Operation
	Resolution	1024*600
Network Parameters	Wired Network	Supports 1-channel 10/100M Ethernet
	Wireless Network	2.4G WiFi
Physical Interfaces	RS-485	1 channel
	Ethernet Port	1-channel RJ45
	USB	1-channel Type-C at the bottom of the device
	Wiegand	1-channel Wiegand 26 / Wiegand 34
	Relay	2 channels
	IO Input	2 channels
	Tamper-Proof	1-channel Hall Tamper-Proof Switch
Camera Parameters	Lens Quantity	2
	Pixel	2 Megapixels
Audio Parameters	Speaker	1 piece, 4Ω 2W
Electrical Parameters	Supply Voltage	9-24V (DC) (12V recommended)
	Power Supply Mode	DC power supply; POE power supply optional
	Working Current	12V/1.5A (13W)
Environmental Parameters	Operating Environment	IP65
	ESD Protection	Contact 8kV, Air 12kV
	Operating Temperature	-20℃ - 60℃
	Storage Temperature	-40℃ - 80℃
Function Parameters	Face Recognition - Algorithm	Video stream-based dynamic face detection, tracking, 1:N recognition algorithm, dynamic dual-camera anti-counterfeiting
	Face Recognition - Face Database Capacity	3,000
	Face Recognition - Recognition Distance	0.3~1.5m
	Card Swiping - 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

	Card Swiping - Swiping Distance	0-3cm. Note: The card-swiping area is located on the bottom black bezel of the screen
	Time Calibration Function	Supports RTC real-time time calibration
	Voice Function	Voice broadcast, supports TTS
	Fill Light Function	a. Supports infrared fill lightb. Does not support white light fill light

4.Precautions

4.4.1 Requirements for Face Enrollment Photos

1、Image Size: 50 - 300 K Image Dimensions: Width 512 - 800 pixels, Height 640 - 1024 pixels Image Format: JPG

2、Background & Appearance Requirements: Use real-life photos without beauty filters, heavy makeup, sunglasses, scarves, masks or other obstructions that cover facial features.

4.4.2 Face Enrollment Requirements

During the face enrollment process, the face should be centered in the enrollment frame as much as possible. The user is required to face the camera directly and remain still until the device completes the enrollment procedure.

4.4.3 Wiring Requirements

1、All unused pins must be insulated properly.

2、If the device is damaged due to short circuit caused by improper insulation of unused pins, the user shall bear full responsibility.

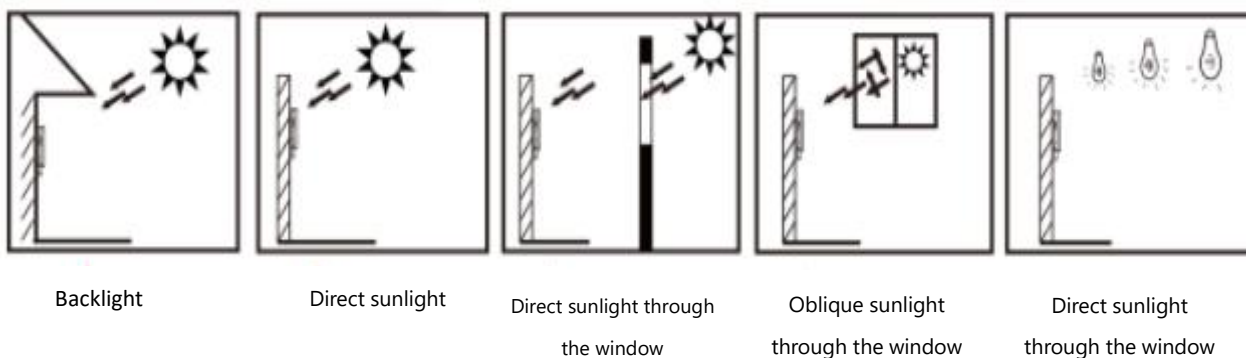
3、Do not use DC power supply and POE power supply simultaneously.

4.4.4 Installation Environment Requirements

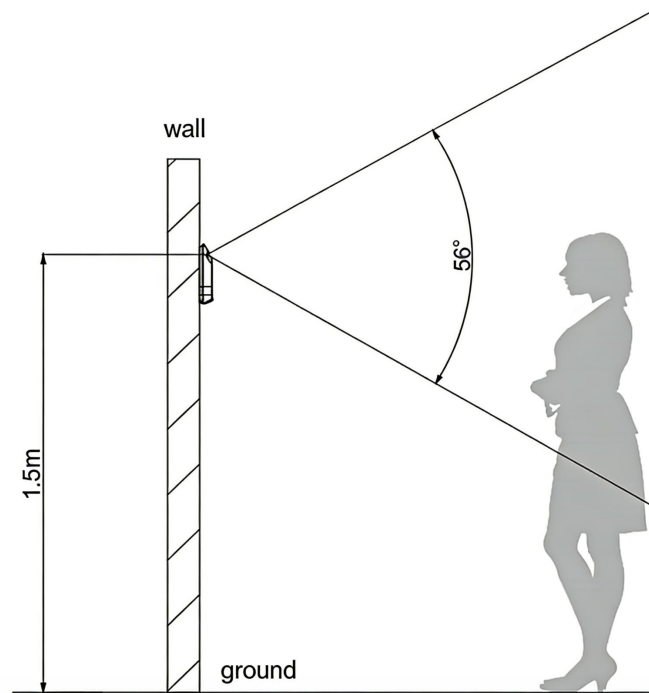
1、Avoid backlighting, direct sunlight, direct sunlight through windows, oblique sunlight through windows, and close-range lighting exposure. All the aforementioned environments will compromise the face recognition performance.

2、The display screen surface and recognition window are made of tempered glass, featuring excellent light transmittance, as well as high pressure resistance and impact resistance. However, contact with objects of higher hardness must still be avoided to prevent scratches on the tempered glass, which would degrade the display and touch performance.

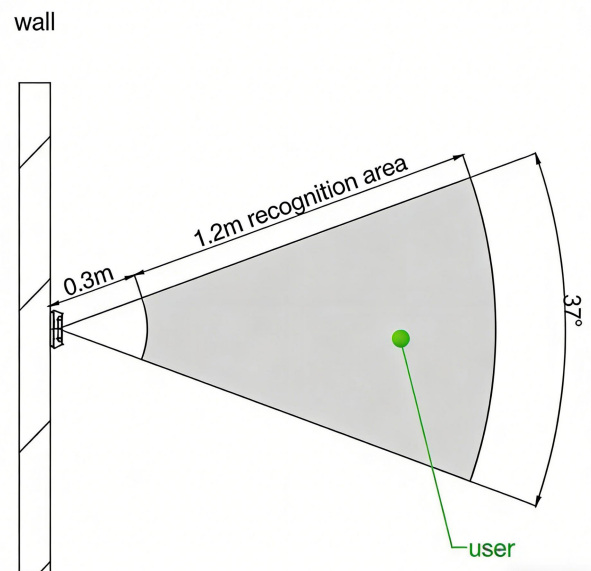
3、The radio frequency (RF) card reading antenna is located on the lower side of the device. During installation, keep metal and magnetic substances at least 10 cm away from the antenna; otherwise, the card-swiping performance will be severely impaired.



4.4.5 Diagram of Reading Area



Side View



Top View

5.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.