



Intelligent Face Recognition Terminal

Product Manual



FCV5000 series

Disclaimer

Please read all contents in this document carefully before using the product to ensure its safe and effective operation. Do not disassemble the product or remove the seal label on the device without authorization; otherwise, Suzhou Fanxi Technology Co., Ltd. shall not be liable for product warranty or replacement.

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1、Product Information

1.1 Product Introduction

The FCV5000/FCV5001 are a series of intelligent terminals mainly applied to access control, attendance and elevator control scenarios. The FCV5000 supports **QR-code scanning, face recognition, card swiping, password verification and remote door-opening**. The FCV5001 supports **fingerprint recognition, face recognition, card swiping, password verification and remote door-opening**.

Equipped with a 5.5-inch LCD touch screen, the devices run DejaOS (Linux) operating system and feature 8 GB storage. Multiple communication interfaces including RS485, Wiegand, Ethernet and Wi-Fi are available, with 4G as an optional expansion.

1.1.1. Product Features

- ◆ 5-inch 720*1280 high-definition LCD touch screen with human-voice audio broadcast
- ◆ Supports video intercom
- ◆ Supports simultaneous recognition of up to 5 persons with continuous voice prompt
- ◆ Recognition accuracy over 99% under full-library condition; recognition time $\leq 0.3s$ per person; recognition distance: 0.3m-1.5m
- ◆ Reliable recognition for users wearing masks, glasses or hats; mask-wearing detection supported
- ◆ Built-in silent liveness detection to effectively defend against photo, video and mask spoofing attacks
- ◆ MQTT protocol supported
- ◆ Multiple signal inputs: external alarm input, door-contact status input, exit-button input

- ◆ Output of QR-code content, card ID and face ID via RS485 and Wiegand plaintext
- ◆ Integrated high-precision clock chip with RTC battery; time data retained upon power failure
- ◆ Optional 4G and POE functions
- ◆ Supports logo customization, protocol customization and OEM services
- ◆ Wall-mount installation compatible with various 86-type junction boxes; flush-mount installation available for scenarios such as vending cabinets and elevators

Applicable Scenarios: The device can be deployed in elevators, shopping-mall stores, factories, teaching and office buildings, etc. Users can conduct secondary development based on our provided Communication Protocol to deliver customized solutions for various special-scenario requirements.

1.2 Appearance

1.2.1. Appearance Introduction



FCV5000



FCV5001

1. 3 Product Parameters

System Parameters	Operating System	DejaOS (Linux)
	Built-in Storage	8GB (expandable to 16GB/32GB)
	CPU	ARM Cortex A7 MP2 1GHz
Network Parameters	Ethernet	1× 10/100M auto-negotiation port
	Wireless Network	2.4 GHz & 5 GHz dual-band Wi-Fi
Physical Interfaces	Ethernet Port	1× RJ45
	RS-485	1 channel
	Wiegand	WG26/WG34/WG64
	IO Input	3 channels
	Relay	1 × high-power relay, 30 V 1 A
Appearance	Material	Fire-retardant PC + Acrylic
Display Parameters	Screen Size	5-inch LCD touch screen
	Resolution	720*1280

Camera	RGB Camera	Field of View: D=65°, H=59°, V=38°	
		Aperture: F2.0	
		Resolution: 1920*1080	
		Focal Length: 4.35 mm	
	IR Camera	Field of View: D=68°, H=60°, V=40°	
		Aperture: F2.2	
		Resolution: 1616*1232	
		Focal Length: 2.35 mm	
Audio Parameters	Speaker	1× 4Ω 2W	
Electrical Parameters	Power Supply	9~24V DC (recommended 12V DC)	
	Power Consumption	16W	
Environmental Parameters	Ingress Protection	IP65	
	ESD Protection	Contact 8kV, Air 12kV	
	Operating Temperature	-20℃~55℃	
	Operating Humidity	10% ~ 90% (non-condensing)	
Function Parameters	Face Recognition	Algorithm	1:N dynamic face detection (anti-photo, anti-video spoofing) Supports mask detection & hardware IR liveness detection
		Face Capacity	50,000
		Recognition Time	< 0.3s
		Recognition Distance	0.3~1.5m
		Recognition Performance	Pass Rate: ≥99% (at 50,000 templates) False Acceptance Rate (FAR): ≤0.01% (at 50,000 templates)
	Card Reading	Antenna Frequency	13.56MHz
		Antenna Size	48mm*39mm
		Reading Distance	0~5cm (depends on card type)
		Supported Card Types	S50、S70、FM1208、FM1216-137、MIFARE CLASSIC EV1 4K(S70)、mifare desfire ev2 d42、UL、FM12081K+7K、NTAG216、ultralight c、UL EV1、DESFIRE EV2 D41、Ultralight EV1、Mifare Desfire ev2 d82
	Fingerprint	Size	Diameter 21mm
		Durability	> 200,000 operations
		Image Resolution	160*160
		Pixel Density	508 dpi
		Capacity	1000 templates
		Recognition Performance	Total recognition time < 2s
			False Acceptance Rate (FAR) < 0.001%

			False Rejection Rate (FRR) < 1%
		Other Features	Multi-color breathing LED, self-learning algorithm
	QR / Barcode Scanner	Pixel	640 × 480
		Symbologies	1D : EAN-13, EAN-8, UPC-A, UPC-E, ISSN, ISBN, Codabar, Code 128, Code 93, ITF-14, ITF-6, Interleaved 2-of-5, Industrial 2-of-5, Matrix 2-of-5, GS1 Databar(RSS), Code 39, Code 11, MSI-Plessey 2D : QR Code, Data Matrix, PDF417, Micro QR
		Reading Precision	1D: 5 mil (Code39, Code128, EAN-13) 2D: 8 mil (QR, Data Matrix, PDF417)
		Field-of-view	Horizontal 73° , Vertical 54°
		Reading Angle	Tilt ±40° , Rotation ±360° , Skew ±30° Horizontal 62° , Vertical 49°
		Reading Distance	0-10 cm

2、Wiring and Installation

2. 1 Wiring

2.1.1. Wiring Requirements

- 1.Insulation treatment must be applied to unused pins!
- 2.Any device damage caused by short circuit due to lack of insulation shall be borne by the user.

2.1.2. Interface Description

(1) External Wiring

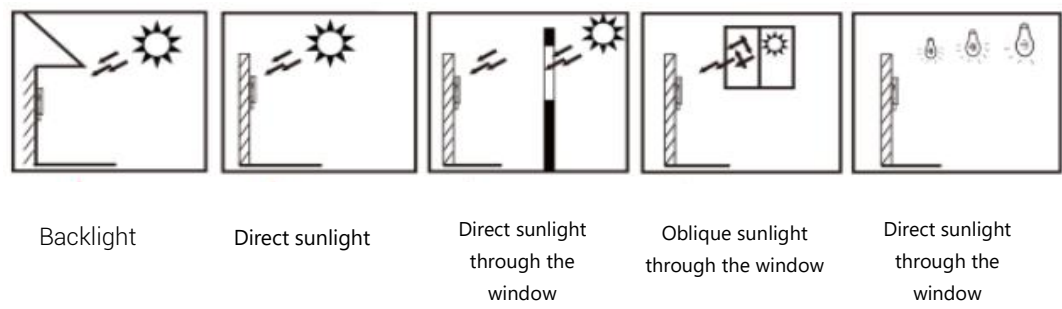
The device outputs 20 bare wires via a 2×10-pin terminal. Pin definitions are shown below:

Pin No.	Layer 1 Pin Definition		Layer 2 Pin Definition	
1	VCC_IN	12V Power Input Positive	GND	Ground
2	GND	Ground	GND	Ground
3	VOUT	Door Lock Output	232_RX	RS232 Receive
4	GPIO_IN3	GPIO Input 3	232_TX	RS232 Transmit
5	GPIO_IN2	GPIO Input 2	485A	RS485-A
6	GPIO_IN1	GPIO Input 1	485B	RS485-B
7	GND	Ground	GND	Ground
8	WG_D1	Wiegand D1	RELAY_NC	Relay Normally-Closed
9	WG_D0	Wiegand D0	RELAY_COM	Relay Common
10	GND	Ground	RELAY_NO	Relay Normally-Open

2. 2 Installation

2.2.1. Installation Requirements

1、 Avoid backlighting, direct sunlight, direct sunlight through windows, oblique sunlight through windows, and close-range lighting. All the above conditions will affect face recognition performance.



2、 The display surface and recognition window are made of tempered glass, which features excellent light transmittance, compression resistance and impact resistance. However, scratches from objects with higher hardness must still be avoided, as they will affect display and touch performance.

3、 The RFID card reading antenna is located at the bottom of the device. During installation, keep the area within 10 cm free of metal and magnetic materials; otherwise, card reading performance will be severely degraded.

Device User Guide

3、 Device Function Operation

This product can be used **directly offline locally**, configured online via the built-in **Webserver**, used with a **SaaS System**, or integrated with the **customer's own system**.

The application scenarios for each method are described below:

Device Side: Ideal for quick setup right after unboxing. No network connection required. Users can directly enroll user information, bind face and other credentials locally on the device for door access. Basic device settings can also be configured on the device.

Webserver: After the device is connected to the network, you can manage user enrollment, view access records, and configure the device via a web browser. It is equivalent to accessing the device's internal configuration and whitelist information through a web interface.

SaaS System: After the device is connected to the network, you can use the **Feocey Office** SaaS platform to:

- enroll users
- view comprehensive access records
- manage users and devices in batches
- perform advanced device configuration

Suitable for large-scale scenarios with many devices and users.

3.1 Firmware Function Architecture

After turning on the device, press the function menu button on the right. After password verification, you will enter the settings menu, which includes the following functions (common

functions in bold):

Local Users: Add, delete, edit and query users and credentials; administrator settings

Network: Wi-Fi, Ethernet connection; network configuration

Access Ctl: Relay, alarm, MQTT settings

System: UI display and language settings; face, card and other credential verification settings;
access log settings; login password settings and other miscellaneous system options

Device Info: View firmware version, capacity, SN, etc.

Access Logs: View access records

Voice Set: Voice prompt settings

Dev Mode: No action required

3. 2 Face Recognition

3.2.1. Usage Notes

(1) Image Requirements

Image size: 50 – 300 KB

Resolution: Width 512 – 800, Height 640 – 1024

Format: JPG

Photo Requirements:

- Real-life photo, no beauty filters, no heavy makeup
- No obstructions: sunglasses, scarves, masks, etc.

During face registration, please position your face in the center of the registration frame, look directly at the camera, and keep still until the device completes registration.

3.3 Webserver

VF124 supports accessing local device services via Webserver, enabling user registration, face/card credential management, access record viewing, basic device configuration, and other functions.

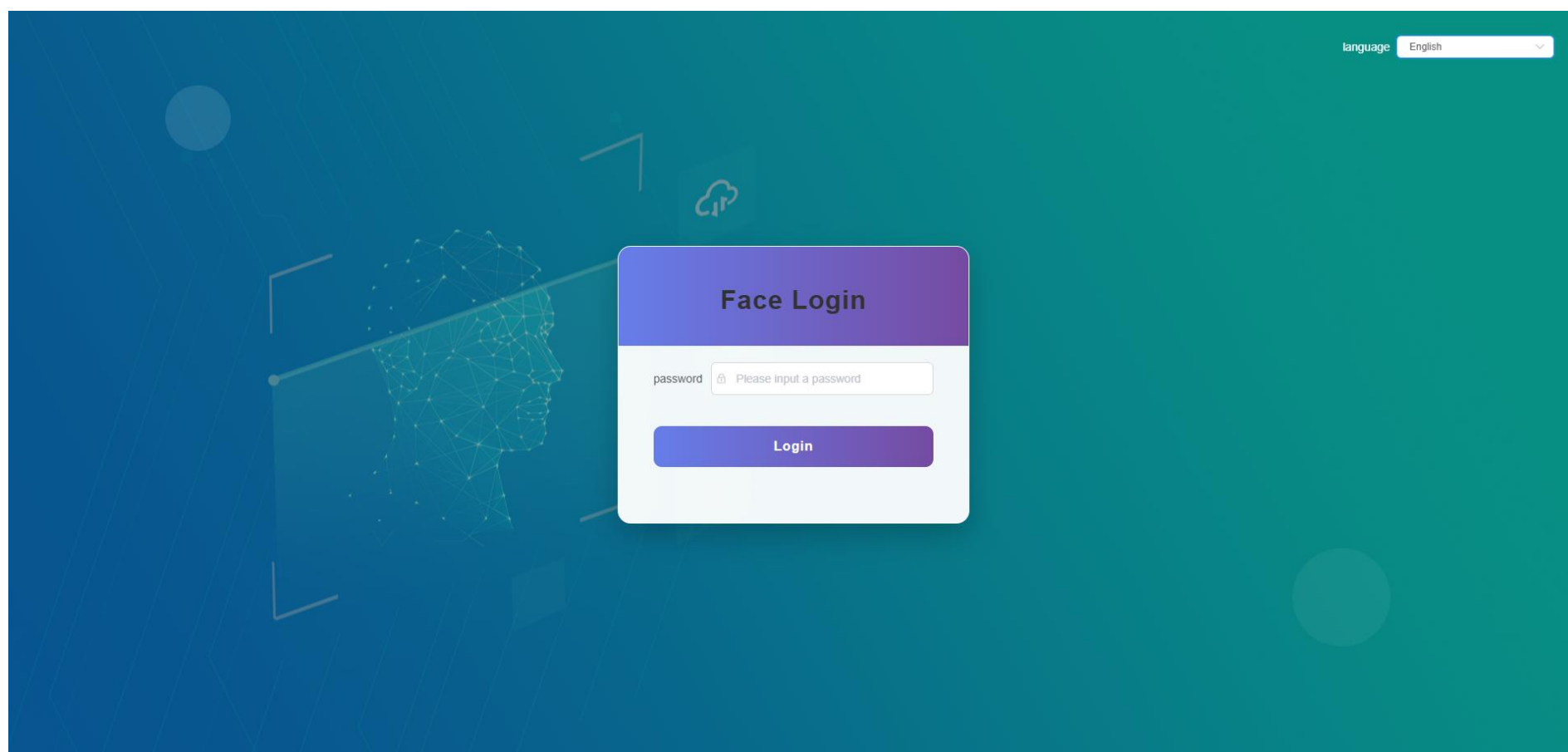
3.3.1. Webserver Login

After the device is properly connected to the network, the IP address will be displayed in the lower right corner of the main face recognition interface.

On a computer within the same local area network, enter the device's IP address followed by :8080 in the browser address bar.

Example: Device IP: 192.168.10.119 Enter in browser: **192.168.10.119:8080**

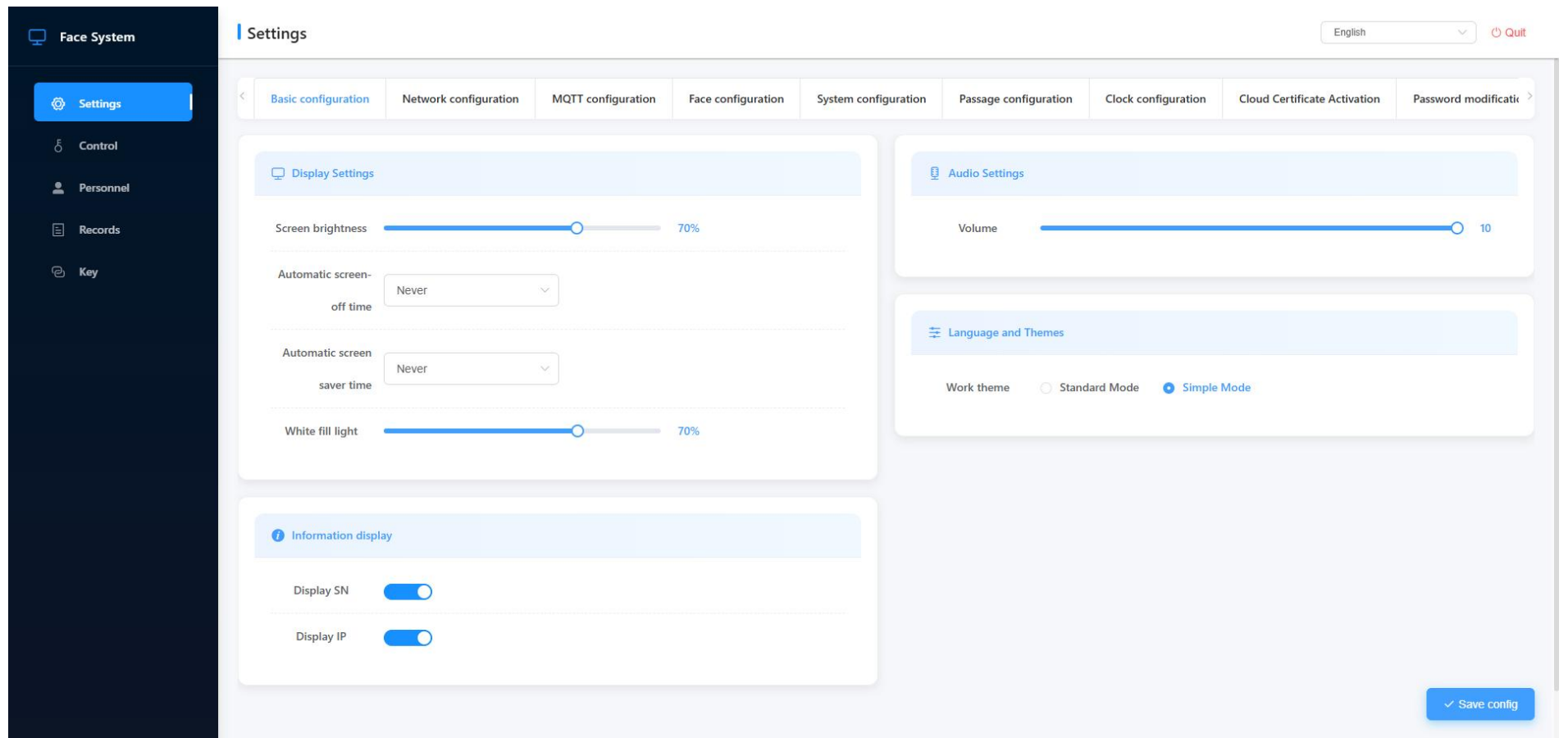
Press Enter to access the device's Webserver page.



Log in with the password (same as the device Settings menu password; default: password).

Language can be switched in the upper right corner of the page.

3.3.2. Webserver Functions



Functions are divided into four categories:

Settings: Same as settings on the device side

Control: Remotely open door, restart, reset, and perform remote upgrades

Personnel: View the internal whitelist; add, delete, edit, and query users, credentials, and permissions

Records: View access records

4、 SaaS System

To use with the **Feocey Office** SaaS system, you may visit the following link:

<https://office.feocey.com/>

After registration and login, bind the device to start using. For the detailed operating guide of **Feocey Office** SaaS, please refer to *Feocey Office User Guide*.

5、Contact Us

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