

# Intelligent Face Recognition Terminal

## FCV5006 Product Manual



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# 1. Introduction

Thank you for choosing the FCV5006 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 FCV5006 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 32GB of storage. 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 so on. It offers four communication methods: RS485, RS232, Ethernet 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 FCV5006 is suitable for use in industrial parks, office buildings, banks, schools, and other scenarios.

## 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 100,000 face entries and 100,000 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 wall-mounted and column-mounted installations.

### 1.3. Technical Parameters

| Category                  | Configuration / Feature      | Description / Parameter                                                                                                                                                                                                                                                                   | Extension          |
|---------------------------|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| Whole Device              | Product Type                 | Face Recognition, Video Intercom, Access Control Terminal, Face Payment                                                                                                                                                                                                                   |                    |
|                           | Model                        | FCV5006                                                                                                                                                                                                                                                                                   |                    |
|                           | Main Chip                    | Quad-core 64-bit Cortex-A55                                                                                                                                                                                                                                                               |                    |
|                           | Main Frequency               | 2.0GHz                                                                                                                                                                                                                                                                                    |                    |
|                           | Operating System             | Android 11                                                                                                                                                                                                                                                                                |                    |
|                           | Processor Computing Power    | 1TOPS                                                                                                                                                                                                                                                                                     |                    |
|                           | Memory                       | 2GB                                                                                                                                                                                                                                                                                       | 4GB                |
|                           | Storage                      | 32GB                                                                                                                                                                                                                                                                                      | 32GB               |
|                           | System Boot Time             | ≤ 60s                                                                                                                                                                                                                                                                                     |                    |
|                           | Working Voltage              | 9~24V (12V recommended)                                                                                                                                                                                                                                                                   |                    |
|                           | Consumption (at 12V Voltage) | 21W (Max)                                                                                                                                                                                                                                                                                 |                    |
| Appearance                | Material                     | Aluminum Alloy CNC                                                                                                                                                                                                                                                                        |                    |
|                           | Surface Treatment            | Anodizing                                                                                                                                                                                                                                                                                 |                    |
|                           | Color                        | Silver                                                                                                                                                                                                                                                                                    |                    |
|                           | Dimensions                   | 243.6 * 129.6 * 21mm                                                                                                                                                                                                                                                                      |                    |
| External Interfaces/Leads | Electrical Interface         | Power Supply, 30V/1A Relay, Ethernet, 485/232, Alarm Input, Door Contact Status Input, USB*2                                                                                                                                                                                              | USB_OTG & USB_HOST |
|                           | Physical Interface           | 8P8C RJ45, 5525 DC Jack, 3.5mm Screw Terminal, USB-A Female Port                                                                                                                                                                                                                          |                    |
| Network/Wireless          | Ethernet                     | 10/100M Ethernet                                                                                                                                                                                                                                                                          |                    |
|                           | WiFi                         | 2.4G WiFi<br>Wi-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 Version               | 2MP RGB Recognition, 2MP IR Liveness DetectionDynamic Range > 80dB                                                                                                                                                                                                                        |                    |
|                           | Recognition Mode             | 1:N Identification, 1:1 Verification                                                                                                                                                                                                                                                      |                    |

|                                           |                          |                                                                                                                                                                                                                                                                                                                              |  |
|-------------------------------------------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
|                                           |                          | (Configurable Switching)                                                                                                                                                                                                                                                                                                     |  |
|                                           | Recognition Time         | ≤ 300ms                                                                                                                                                                                                                                                                                                                      |  |
|                                           | Recognition Distance     | 0.3～1.5m                                                                                                                                                                                                                                                                                                                     |  |
|                                           | Face Database Capacity   | 100,000 Faces                                                                                                                                                                                                                                                                                                                |  |
|                                           | Face Enrollment          | Single & Batch Import Supported via Software Backend                                                                                                                                                                                                                                                                         |  |
| Card Swiping Performance Parameters (NFC) | Antenna Specification    | 13.56 MHz                                                                                                                                                                                                                                                                                                                    |  |
|                                           | 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.<br>Access the web server, navigate to the NFC management page, and register a new NFC card.<br>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 |  |
| Device Protection                         | Waterproof & Dustproof   | IP66 for standard models without additional modules                                                                                                                                                                                                                                                                          |  |
|                                           | ESD Protection           | Contact Discharge 8KV, Air Discharge 12KV                                                                                                                                                                                                                                                                                    |  |
|                                           | Surge Protection         | Power Supply, Ethernet, 485Differential Mode 0.5KV, Common Mode 1KV                                                                                                                                                                                                                                                          |  |
| Environmental Characteristics             | Operating Temperature    | 0～55℃                                                                                                                                                                                                                                                                                                                        |  |
|                                           | Storage Temperature      | -40～80℃                                                                                                                                                                                                                                                                                                                      |  |
|                                           | Humidity                 | 10%～90%                                                                                                                                                                                                                                                                                                                      |  |
| Human-Machine Interaction                 | LCD                      | 8-inch LCD Touch Screen                                                                                                                                                                                                                                                                                                      |  |
|                                           | TP (Touch Panel)         | Capacitive Touch, 5-point Touch                                                                                                                                                                                                                                                                                              |  |
|                                           | Voice Announcement       | Built-in 1-piece 4Ω 2W Speaker                                                                                                                                                                                                                                                                                               |  |
| Others                                    | Configuration Method     | Tool Platform, Touch Screen                                                                                                                                                                                                                                                                                                  |  |
|                                           | Environmental Compliance | RoHS                                                                                                                                                                                                                                                                                                                         |  |
|                                           | Application Scenarios    | Indoor, Outdoor                                                                                                                                                                                                                                                                                                              |  |
|                                           | Sunshade                 | Sheet Metal Sunshade, Sprayed, White                                                                                                                                                                                                                                                                                         |  |

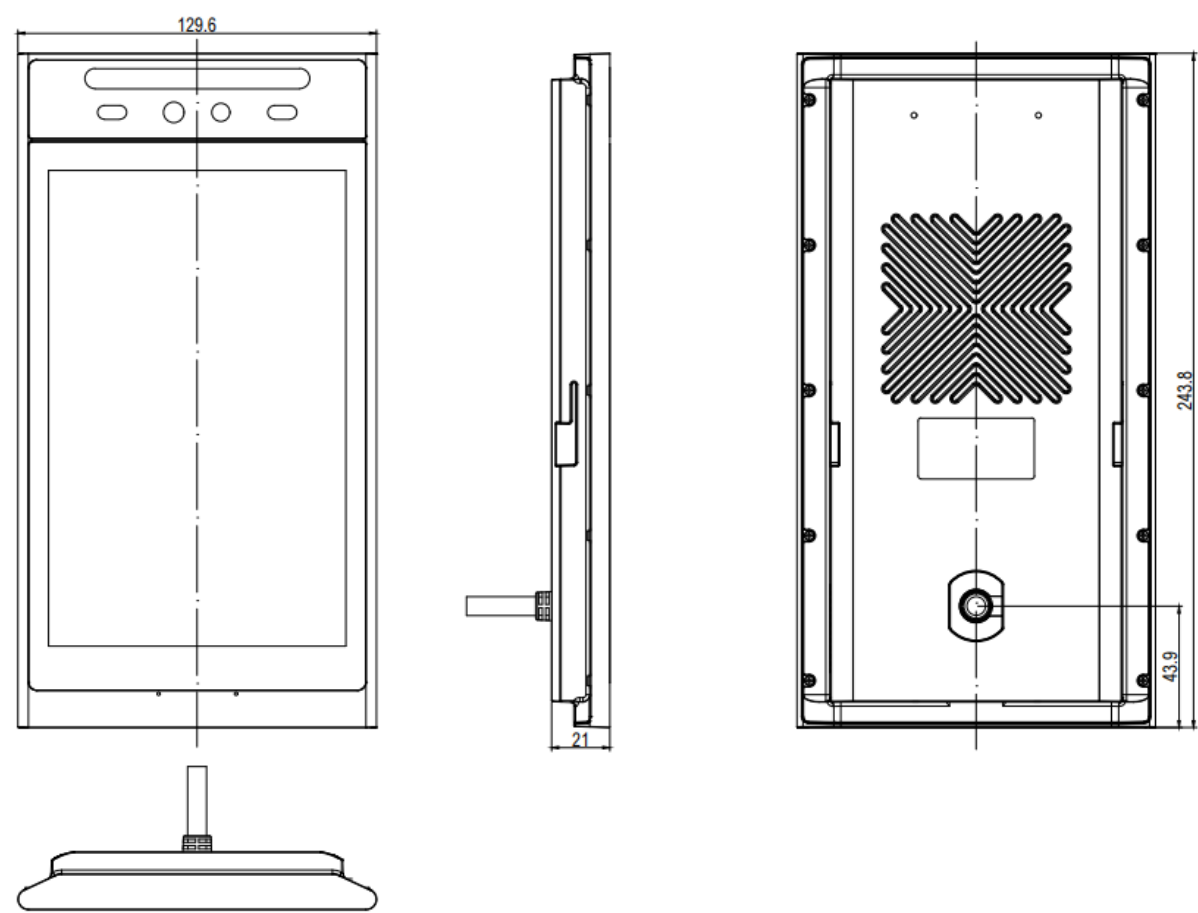
|                     |                  |                                                                |  |
|---------------------|------------------|----------------------------------------------------------------|--|
| Installation Method | Desktop          | Compatible with Standard Desktop Base                          |  |
|                     | Wall-mounted     | Support 86-type Box, Flat Wall Mounting, Preserved Wiring Duct |  |
|                     | Turnstile/Column | Equipped with Torch Holder, Compatible with Turnstile Column   |  |

## 2. Product Appearance

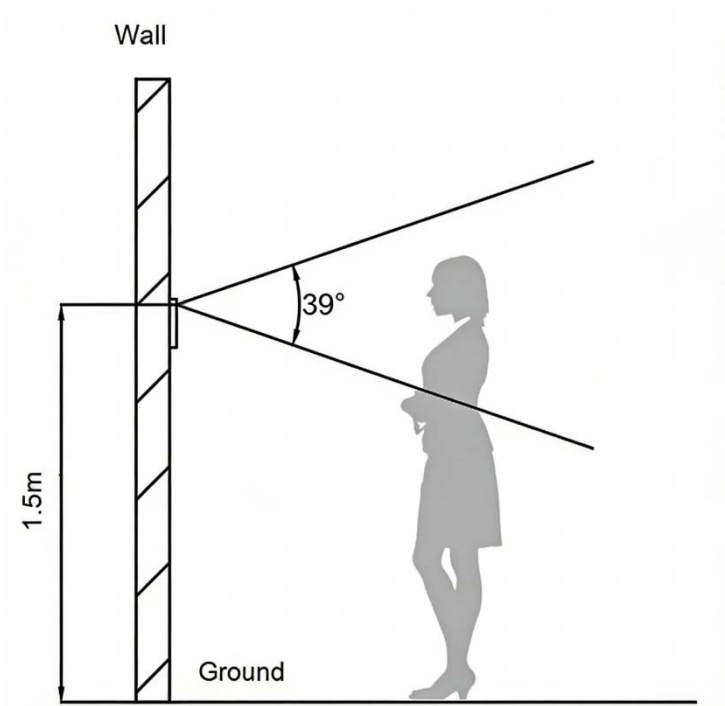
### 2.1. Appearance Diagram



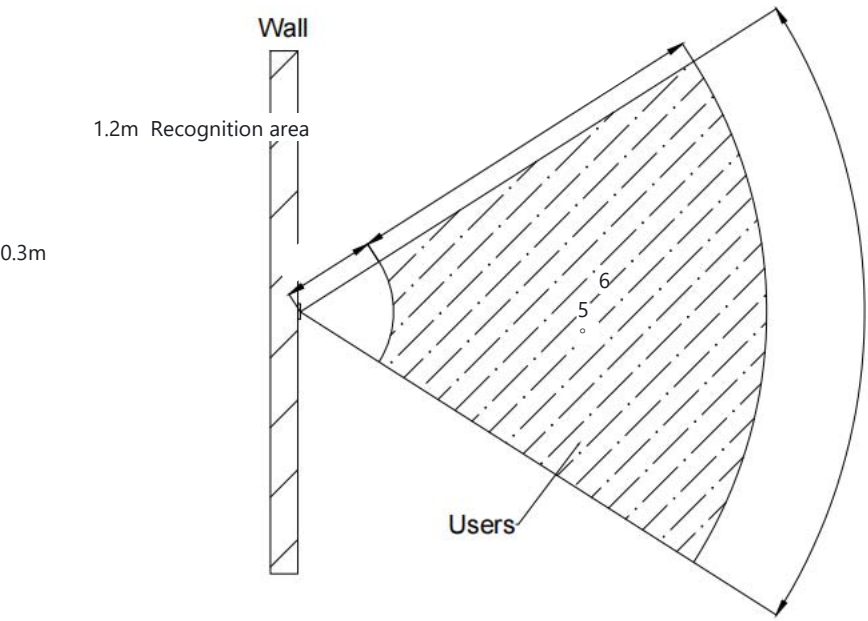
2.2. Exterior Dimension Diagram



2.3. Diagram of Reading Area



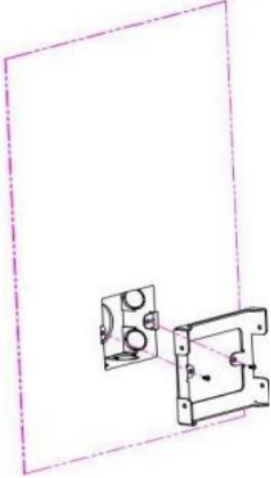
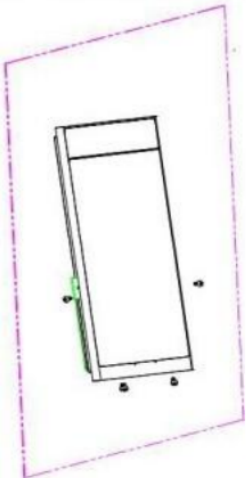
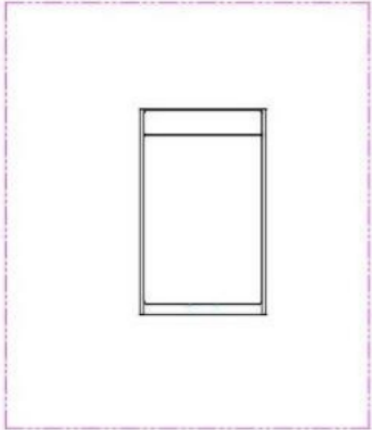
Side View



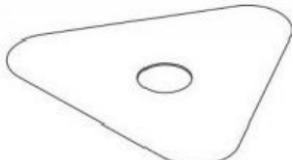
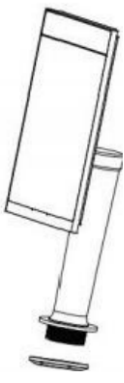
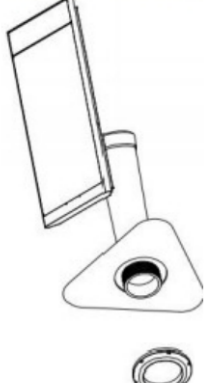
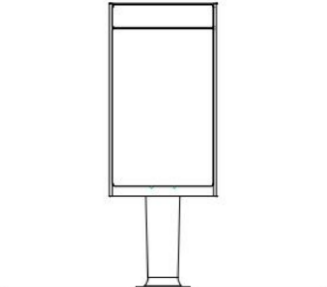
Top View

2.4. Installation Method

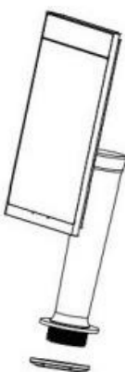
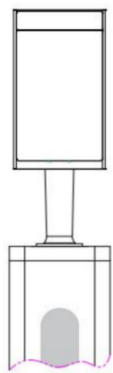
For 86-Box Installation Scenarios

|                                                                                    |                                                                                     |                                                                                     |
|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |
| 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

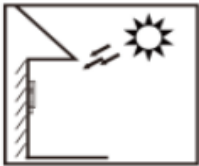
|                                                                                     |                                                                                     |                                                                                       |                                                                                       |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  |  |
| 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

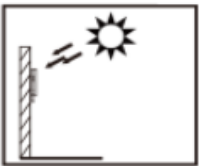
|                                                                                                                                  |                                                                                                                         |                                                                                                                                                                          |                                                                                                                                                                       |
|----------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <p>1.Remove the upper cover of the column.</p> |  <p>2.Remove the torch holder nut.</p> |  <p>3. Secure the upper cover to the torch holder and connect the wire terminals.</p> |  <p>4.Assemble the upper cover back onto the column; installation is complete.</p> |
|----------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Installation Precautions:

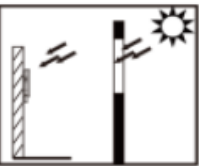
Avoid backlighting, direct sunlight, direct sunlight through windows, oblique sunlight through windows, and close-range lighting.



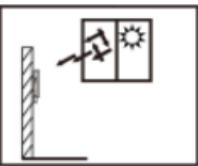
Backlight



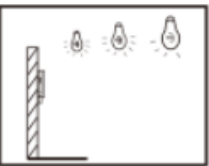
Direct sunlight



Direct sunlight through the window



Oblique sunlight through the window

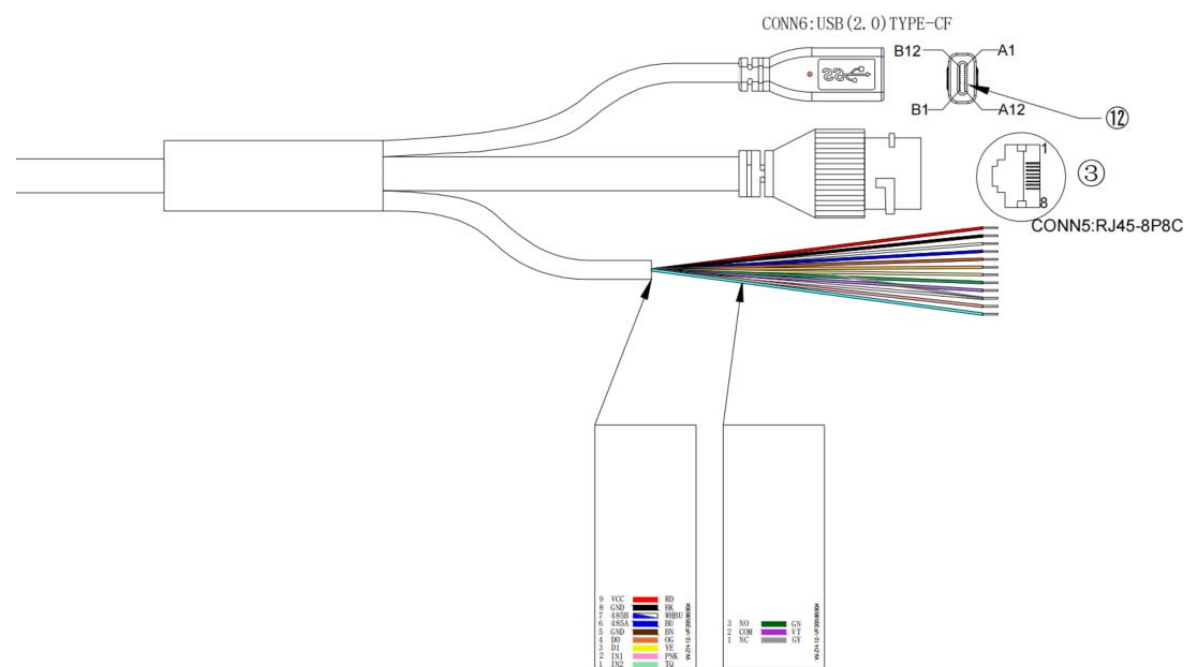


Direct sunlight through the window

## 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 | <b>NO:</b> Normally Open Terminal (Relay) |
|       | 2 | <b>COM:</b> 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.