User Manual

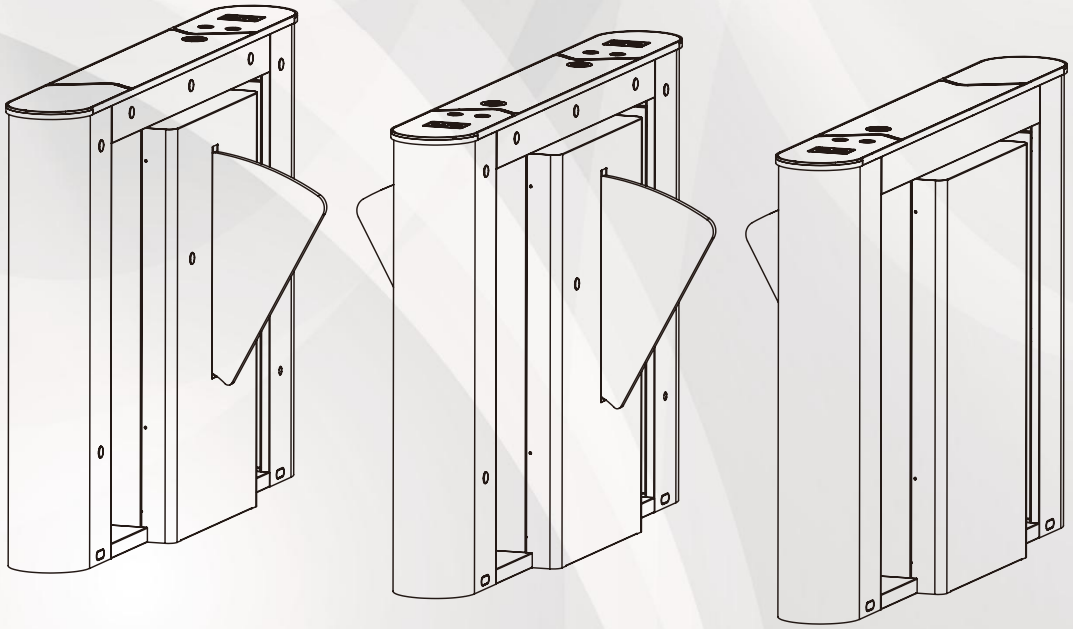
FBL6000 Pro Series

Applicable Model(s): FBL6000 Pro, FBL6200 Pro

Date: August 2025

Doc Version: 1.0

English



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The product will be updated from time to time without prior notice. The latest operation procedures and relevant documents are available on http://www.zkteco.com

If there is any issue related to the product, please contact us.

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To know more about our global branches, visit www.zkteco.com.

About the Company

ZKTeco is one of the world's largest manufacturer of RFID and Biometric (Fingerprint, Facial, Finger-vein) readers. Product offerings include Access Control readers and panels, Near & Far-range Facial Recognition Cameras, Elevator/floor access controllers, Turnstiles, License Plate Recognition (LPR) gate controllers and Consumer products including battery-operated fingerprint and face-reader Door Locks. Our security solutions are multi-lingual and localized in over 18 different languages. At the ZKTeco state-of-the-art 700,000 square foot ISO9001-certified manufacturing facility, we control manufacturing, product design, component assembly, and logistics/shipping, all under one roof.

The founders of ZKTeco have been determined for independent research and development of biometric verification procedures and the productization of biometric verification SDK, which was initially widely applied in PC security and identity authentication fields. With the continuous enhancement of the development and plenty of market applications, the team has gradually constructed an identity authentication ecosystem and smart security ecosystem, which are based on biometric verification techniques. With years of experience in the industrialization of biometric verifications, ZKTeco was officially established in 2007 and now has been one of the globally leading enterprises in the biometric verification industry owning various patents and being selected as the National High-tech Enterprise for 6 consecutive years. Its products are protected by intellectual property rights.

About the Manual

This manual introduces the operations of **FBL6000 Pro Series**.

All figures displayed are for illustration purposes only. Figures in this manual may not be exactly consistent with the actual products.

Features and parameters with ★ are not available in all devices.

Safety Instruction

These instructions are intended to ensure that user can use the product correctly to avoid danger or property loss.

The precaution measure is divided into Dangers and Cautions:
Dangers: Neglecting any of the warnings may cause serious injury or death.
Cautions: Neglecting any of the cautions may cause injury or equipment damage.

Symbols

Convention	Description
	**Dangers:** Follow these safeguards to prevent serious injury or death.
	**Cautions:** Follow these precautions to prevent potential injury or material damage.

 **Dangers:**

- In the use of the product, you must be in strict compliance with the electrical safety regulations of the nation and region.
- The equipment must be connected to an earthed mains socket-outlet.
- Shock hazard! Disconnect all power sources before maintenance.
- Do not touch the bare metal contacts of the inlets after the circuit breaker is turned off. Electricity still exists.
- To prevent possible hearing damage, do not listen at high volume levels for long periods.
- All the electronic operation should be strictly compliance with the electrical safety regulations, fire prevention regulations and other related regulations in your local region.
- Please use the power adapter, which is provided by normal company. The power consumption cannot be less than the required value.
- Do not connect several devices to one power adapter as adapter overload may cause over-heat or fire hazard.
- Please make sure that the power has been disconnected before you wire, install or dismantle the device.
- If the top caps should be open and the device should be powered on for maintenance, make sure:
  1. Power off the fan to prevent the operator from getting injured accidentally.
  2. Do not touch bare high-voltage components.
  3. Make sure the switch's wiring sequence is correct after maintenance.
- Please make sure that the power has been disconnected before you wire, install or dismantle the device.

- If smoke, odors or noise rise from the device, turn off the power at once and unplug the power cable, and then please contact the service center.
- If the product does not work properly, please contact your dealer or the nearest service center. Never attempt to disassemble the device yourself. (We shall not assume any responsibility for problems caused by unauthorized repair or maintenance.)
- The Terminal PE of the switch should be connected to a ground wire.

Cautions:

- Instructions must be read before installation. Please follow these instructions carefully, incorrect installation could affect gate operation.
- When mounting and positioning this product please ensure the power cable is unplugged.
- The motor cover will need to be removed to mount the motor to the mounting plate. Electrical-related operation of the main unit can only be made by a licensed electrician.
- To prevent injury, this equipment must be securely attached to the floor/base of the turnstile in accordance with the installation instructions.
- Keep straight down when moving or using the equipment.
- Never place the equipment in an unstable location. The equipment may fall, causing serious personal injury or death.
- Stainless steel may be corroded in some circumstances. You need to clean and care the device by using the stainless steel cleaner. It is suggested to clean the device every month.
- Do not drop the device or subject it to physical shock, and do not expose it to high electromagnetism radiation. Avoid the equipment installation on vibrations surface or places subject to shock (ignorance can cause equipment damage).
- Do not place the device in extremely hot (refer to the specification of the device for the detailed operating temperature), cold, dusty or damp locations, and do not expose it to high electromagnetic radiation.
- The device cover for indoor use shall be kept from rain and moisture.
- Exposing the equipment to direct sun light, low ventilation or heat source such as heater or radiator is forbidden (ignorance can cause fire danger).
- Do not aim the device at the sun or extra bright places. A blooming or smear may occur otherwise (which is not a malfunction however), and affecting the endurance of sensor at the same time.
- Please use the provided glove when open up the device cover, avoid direct contact with the device cover, because the acidic sweat of the fingers may erode the surface coating of the device cover.
- Please use a soft and dry cloth when clean inside and outside surfaces of the device cover, do not use alkaline detergents.
- Please keep all wrappers after unpack them for future use. In case of any failure occurred, you need to return the device to the factory with the original wrapper. Transportation without the original wrapper may result in damage on the device and lead to additional costs.

- Improper use or replacement of the battery may result in hazard of explosion. Replace with the same or equivalent type only. Dispose of used batteries according to the instructions provided by the battery manufacturer.
- Biometric recognition products are not 100% applicable to anti-spoofing environments. If you require a higher security level, use multiple authentication modes.
- Do not stay in the lane when the device is rebooting.
- RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.
- SUITABLE FOR MOUNTING ON CONCRETE OR OTHER NON-COMBUSTIBLE SURFACE ONLY.
- The instructions shall require connection of the equipment protective earthing conductor to the installation protective earthing conductor.

Table of Contents

1 Overview

1.1 Introduction

The FBL6000 Pro Series flap barrier is designed for high-traffic environments, it features a rapid and responsive flap barriers that achieves a throughput rate of30 people per minute, effectively alleviating congestion.

Constructed with SUS304 stainless steel and IPX4 protection rating, ensuring the FBL6000 Pro for waterproof and corrosion resistance. Also, theFBL6000 Pro Series is equipped with multiple infrared sensors, anti-pinch technology, and an unauthorized access alarm system, it ensures pedestrian safety at all times.Whether in corporate offices, transit stations, or public facilities, the system guarantees a safe and reliable experience.

1.2 Features

Reliability

- SUS304 stainless steel casework and achieved IPX4 protection rating ensuring excellent waterproofing and corrosion resistance for outdoor and adverse weather operation.
- High quality electrical components to ensure reliable performance.

Safety Features

- Barriers retract automatically during power outage with capacitor board installed, ensuring safe and unobstructed passage.
- The system is equipped with advanced safety features such as automatic fault detection, dry contact and switch signal input interfaces, adjustable automatic delayed closing, and safety detection via infrared sensors. Additional functions include alarms for illegal intrusion and reverse passage, as well as anti-pinch protection, providing comprehensive safety for pedestrians and stable system operation.

Seamless Integration with Biometric Security Access Control

- The flip barrier can be seamlessly integrated with a wide range of identity recognition devices, including facial recognition, RFID, QR code and fingerprint recognition. Flexible integration with various authentication methods enables efficient management of high throughput and ensures smooth and secure pedestrian flow.

- ZKTeco provides true plug&play turnstiles with the lowest possible total cost of ownership in the industry.

Passage Indication

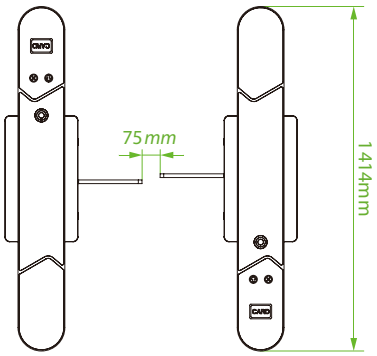
- Passage indicator lights provide clear guidance: a green arrow signals permission to proceed, while a red cross indicates passage is prohibited. This intuitive visual guidance helps maintain orderly and efficient pedestrian movement.

1.3 Appearance

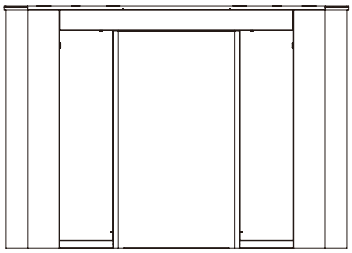
1.3.1 FBL6000 Pro

Unit: mm

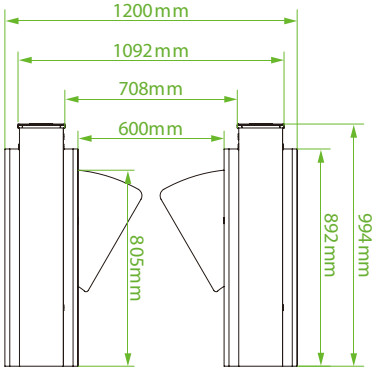
Top View



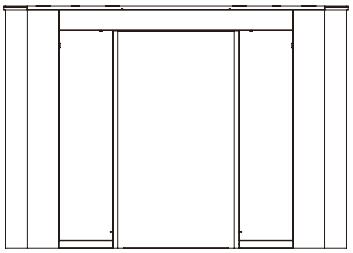
Side View



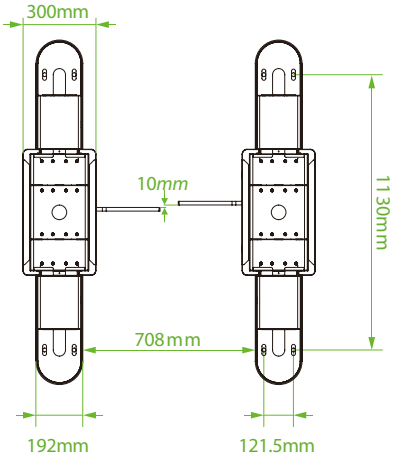
Front View



Side View



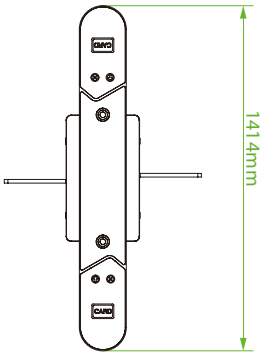
Bottom View



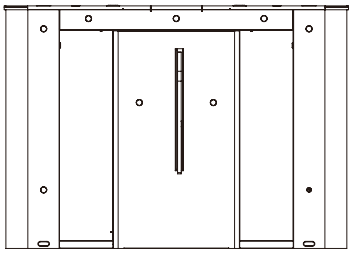
1.3.2 FBL6200 Pro

Unit: mm

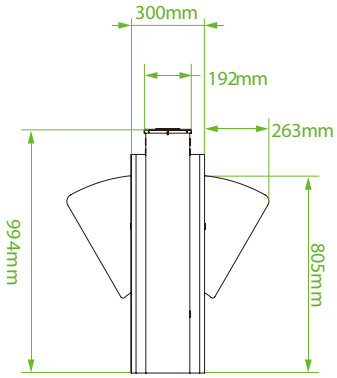
Top View



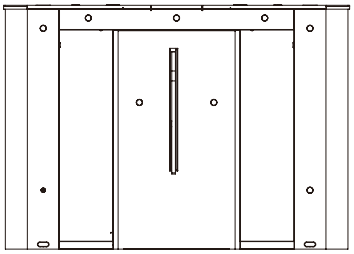
Side View



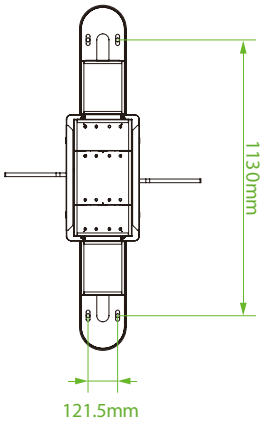
Front View



Side View



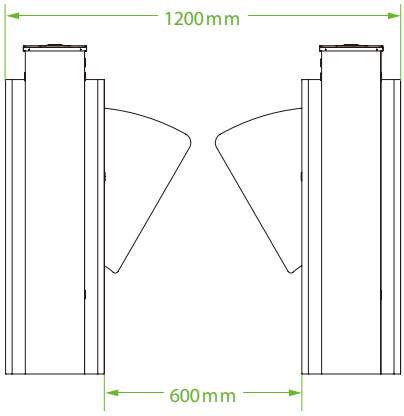
Bottom View



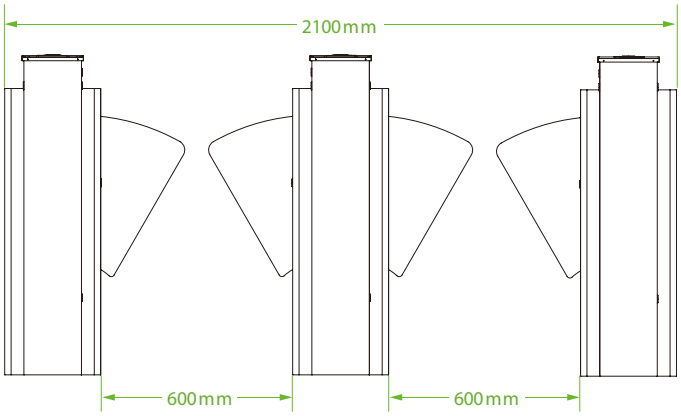
1.3.3 Swing Barriers Specifications

The FBL6000 Pro and FBL6200 Pro can be combined to form a single, dual or multi-lane system, allowing the user to select the appropriate swing barrier size according to actual needs.

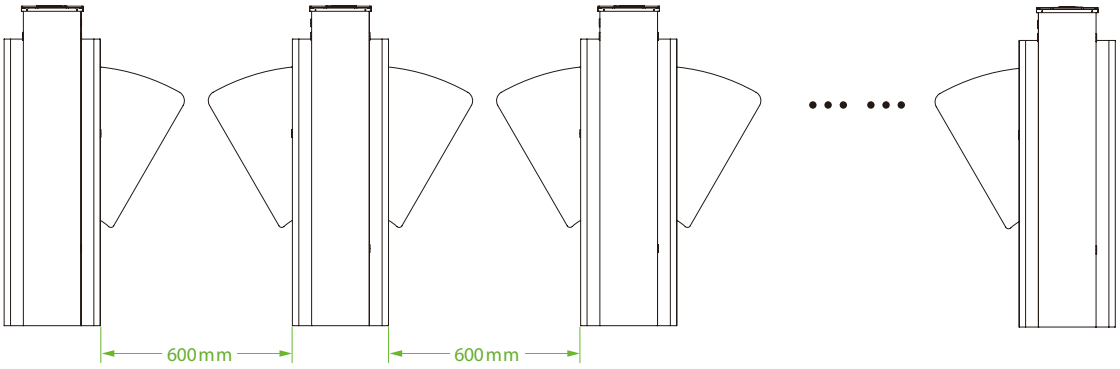
1) Single-lane



2) Dual-lane

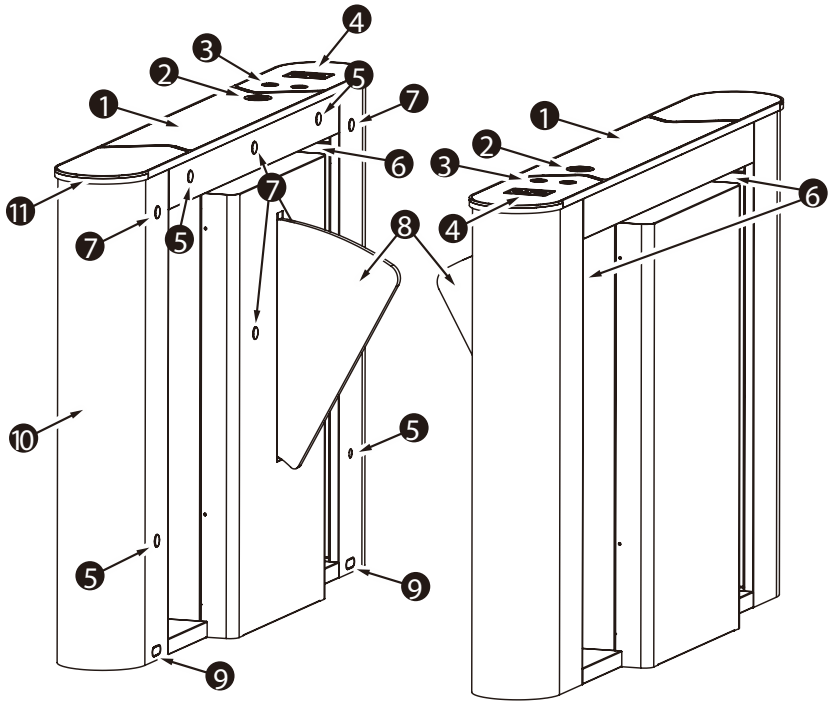


3) Multi-lane

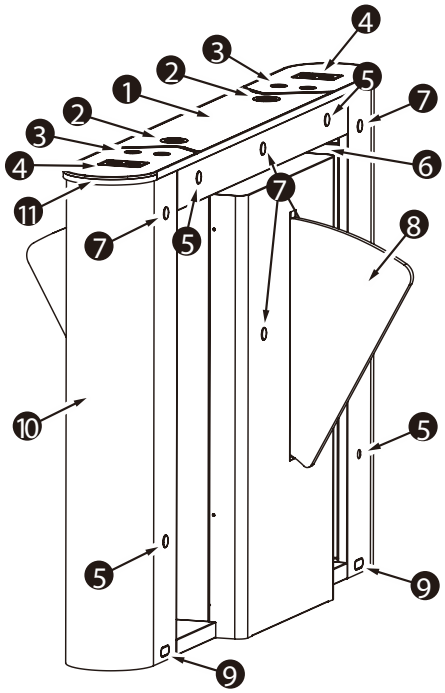


1.4 System Components

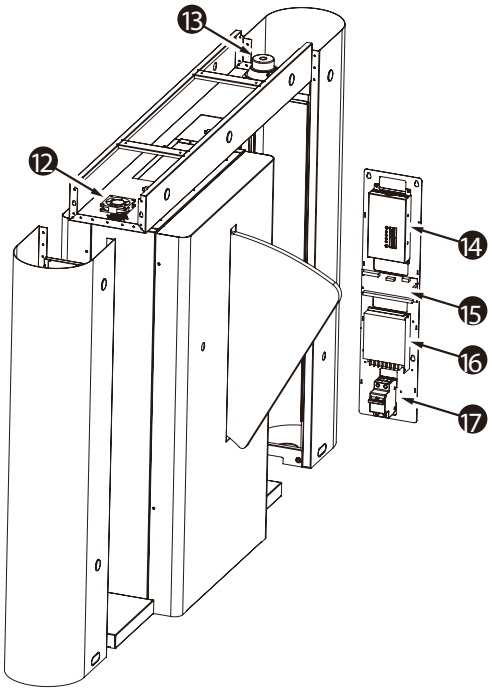
- **FBL6000 Pro**



- **FBL6200 Pro**



Core Component



No.	Components	Descriptions
1	Top Lid	Stainless steel sheet(SUS304)
2	Hole Plugs	Reserved mounting holes for facial authentication devices.
3	Traffic Indicator	Top LED indicator: Blue=Door closed/stand by Green=Door opening Red=Door closing/alarm
4	Verification Area	Card (RFID)/ QR Code/ Fingerprint/ Facial authentication are available.
5	Extended Infrared Sensor	Use to support addition of infrared sensors.
6	Chassis Cover & Lock	Used to lock the top lid and chassis to ensure the safety of the equipment.
7	Infrared Sensor	It detects the position of the pedestrian and plays a role in ensuring safety and protection.
8	Acrylic Swing Arm	retractable flap barrier
9	Wiring Holes	
10	Side Lids	Acrylic
11	Visual Indicator	Side LED indicator: Green=Lane available Red=Lane unavailable
12	Fan	Used for cooling.

13	Speaker	To play alarms or alert voices.
14	Access controller	Responsible for verifying user credentials. Upon successful authentication, it sends a door open signal to the turnstile controller. If authentication fails, access is denied and no signal is sent.
15	IR Sensor Board	Used to control sensors.
16	Power Supply	110V / 220V ±10% AC @50Hz/ 60Hz
17	Circuit Breaker	It provides reliable protection by automatically disconnecting the circuit in the event of overload, short circuit, under voltage, or power loss.

1.5 Technical Specifications

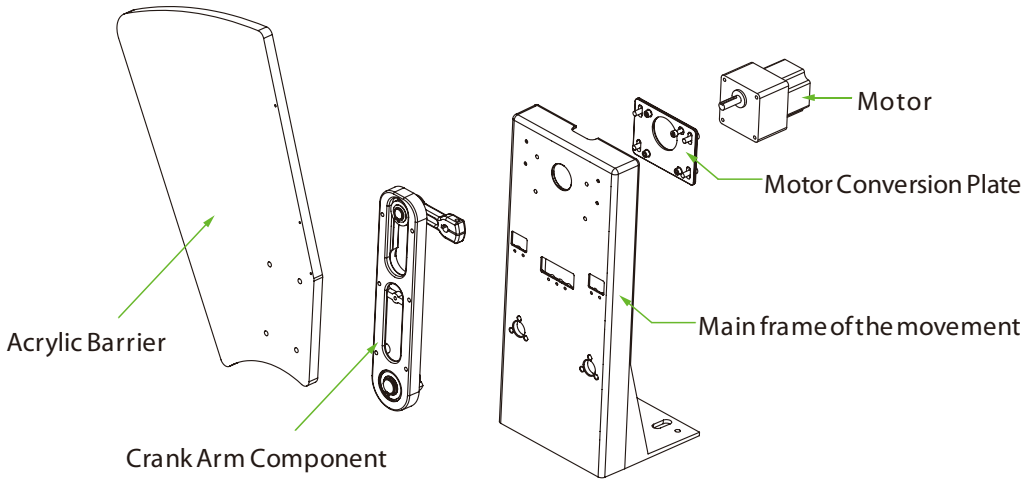
Model	FBL6000 Pro	FBL6200 Pro
Audio Indicator	Speaker	
Visual Indicator	LED pictograms Steady green arrow = normal use Steady red cross = door closing	
Display	N/A	
Lane Type	Single lane	Dual flap barriers for additional lane
Lane Width	600mm	
Lane Height	994mm	
Barrier Movement Type	Retractable Flap barrier (Acrylic/ Optional: Tempered Glass)	
Motor	DC brushless motor	
Movement Speed	0.6s to 1s	
Movement Accuracy	1.5 Degree per movement	
Clutch	N/A	
Cabinet Material	SUS304 Stainless steel	
Lid Material	SUS304 Stainless steel	
IR Sensors	Equipped with 5 pairs (standard). Support up to 9 pairs (optional).	
Motherboard Function	System configuration, access mode configuration,anti-tailgate configuration.	
Motherboard Communication	Fire alarm port (Relay)*1, RS485 port*1	
Controller	C3 series controller/ InBio series controller (optional). 3rd-party controller subject to turnstile chassis space.	

Credential Options	RFID reader: ProID10 ;Fingerprint reader: FR1500S or 3rd-party readers; QR Code reader (Static / Dynamic): QR500	
Flow Rate	Facial Recognition:30 passengers per minute; RFID: 20 passengers per minute; Fingerprint:15passengers per minute ; QR Code: 30 passengers per minute ;	
Accessibility	Standard lane(600mm):adult	
Power Supply	AC110-220,50/60Hz	
Power Rating	40W	
Fire Signal	Input for voltage-free contact	
Noise Level	Less than 60 dB	
MCBF	>5 million	
Weight	Net Weight:100kg Gross Weight:150kg	Net Weight: 70kg Gross Weight: 90kg
Dimensions (L*W*H)	1414*300*994mm	1414*300*994mm
Dimensions with Packaging (L*W*H)	1510*780*1230mm	1510*400*1230mm
Operating Temperature	-20℃ to 70℃	
Operating Humidity	0% to 95% RH (non-condensing)	
Certifications	CE,FCC	
Ingress Protection Rating	IPX4	
Supported Software	ZKBio CVAccess/ ZKBio CVSecurity (Depends on equipped access controller)	
Safety Features	Power off unlock device/ Fire alarm active door release	
Security Features	Anti-intrusion, wrong way enter alarm Automatically close/lock door no one pass	
Product Delivery	Pre-assembled for easy installation	
Application Environment	Indoor and Outdoor	
Site Preparation	Flat and level finished floor (optional base plate for unfinished floors)	
Security Level	Middle	
Emergency Mode	Barrier unlocks automatically during emergencies	
Packing Material	Wooden Box	

1.6 Mechanical System

The mechanical system of the turnstile includes the chassis and the core component.

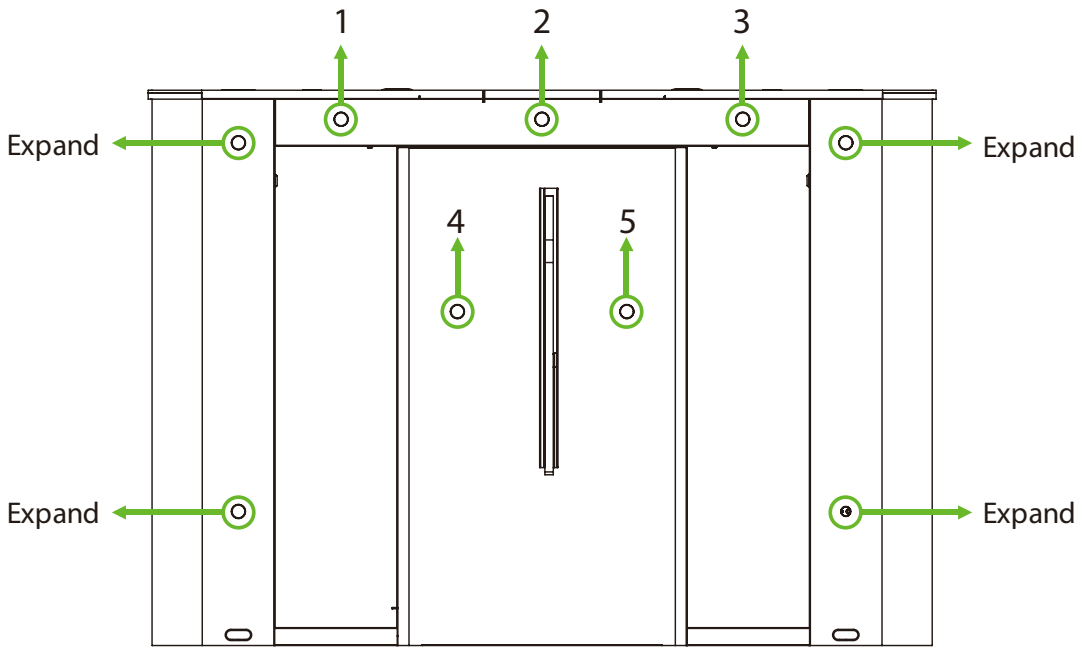
- **Chassis:** It is a carrier where the Traffic Indicator, Infrared Sensor and the Door lock are installed.
- **Core Component:** The core component mainly consists of the Motor, Motor Conversion Plate, Frame, Crank Arm and Barrier.



1.7 Electronic Control System

The electronic control system of a turnstile is mainly composed of the Motor Driver, Turnstile Control Board, Traffic Indicator, Alarm and Infrared Sensor.

- **Card Reader:** The reader reads the data in the card and sends it to the Access Controller.
- **Fingerprint Reader:** The device compares the fingerprint that is being pressed onto the fingerprint reader with all the fingerprint data and sends it to the Access Controller.
- **Turnstile Control Board:** The Turnstile control board is the system's control center that receives signals from the access controller. The IR performs logical calculation and processing of these signals and then sends executive commands to the Traffic Indicator, Motor, and the alarm.
- **Traffic Indicator:** The system will light up the red indicator when the gate is closed. When someone passes the verification, the system will light up the green indicator.
- **Alarm:** The alarm gives the voice and light alarm if the system detects any unauthorized entry to the passage, false direction entry, and anti-tailgating.
- **Infrared Sensor:** It detects the position of the pedestrian and plays the role of safety protection. The exact location is shown below:



Description:

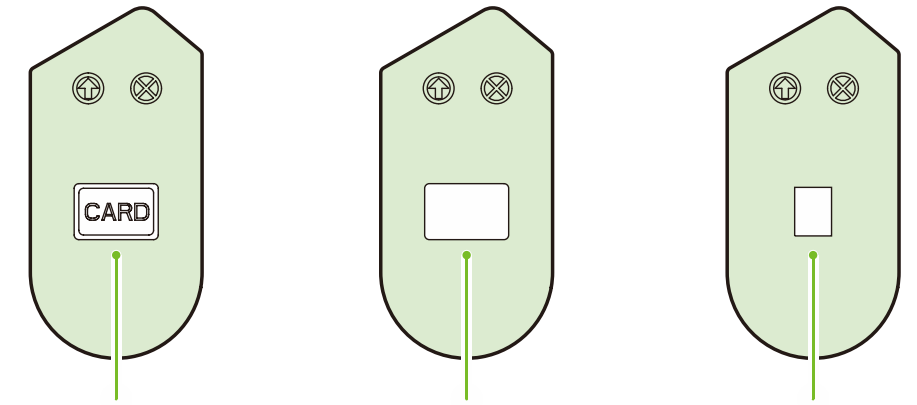
- **1-5:** 5 pairs of infrared sensors as standard.
- **Expand:** represents expandable infrared sensors, supports customised infrared sensors.

2 Authentication Methods

Users can freely choose to configure the authentication module according to actual needs. The following options are included.

Streamlined Under Mount Options:

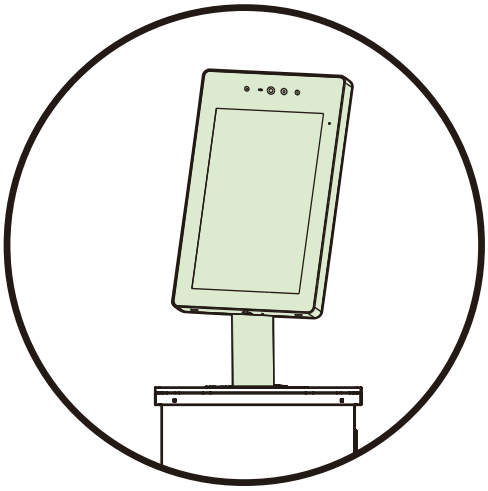
RFID only, QR Code only, Fingerprint only



Card Reading Area QR Code Collector Fingerprint Sensor

Top Mount Option:

Mounting Pole (Compatible with ProFace X series / SpeedFace V5L / Elite Pass).

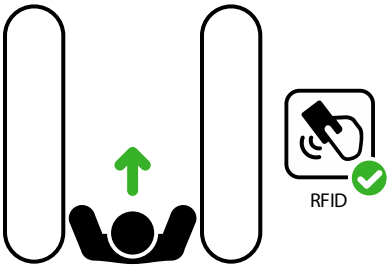


2.1 Card Verification★

When the device is configured with a card reader module, the Card Verification mode compares the card number in the card induction area with all of the card number data registered in the device and sends it to the Access Controller.

When a user presses his / her card on the card verification area, the device enters card authentication mode.

Verification is successful:



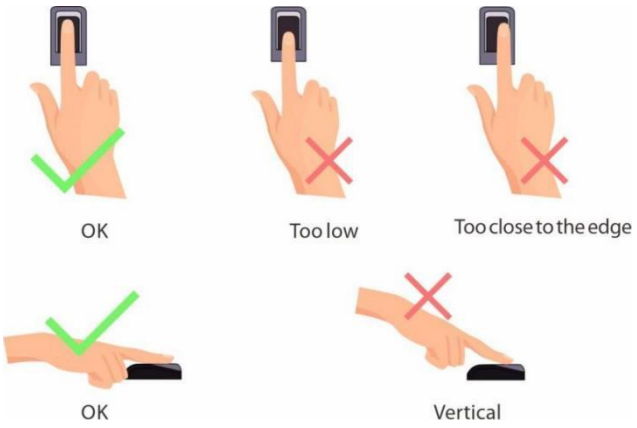
Verification is failed:

2.2 Fingerprint Verification★

In this verification mode, the device compares the fingerprint that is being pressed onto the fingerprint reader with all the fingerprint data sends it to the Access Controller.

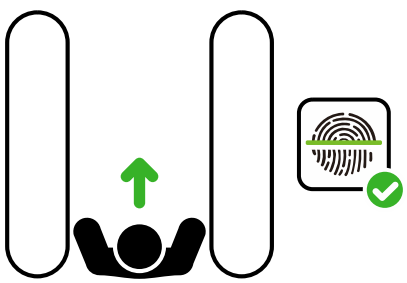
The device enters the fingerprint authentication mode when a user presses his/her finger onto the fingerprint scanner.

Recommended fingers: It is recommended to use index, middle, or ring finger for registration and avoid using the thumb or little finger, as they are difficult to accurately press onto the fingerprint reader.



Note: Please use the correct method when pressing your fingers onto the fingerprint reader for registration and identification. Our company will assume no liability for recognition issues that may result from incorrect usage of the product. We reserve the right of final interpretation and modification concerning this point.

Verification is successful:

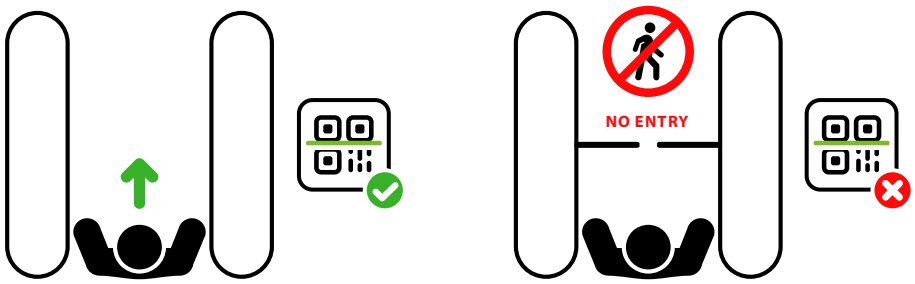


Verification is failed:

2.3 QR Code Verification★

The QR code Verification mode is to scan the QR code on the user's mobile phone through the QR code scanner and compare the data with the registered QR code, and then sends it to the Access Controller.

When the user places the mobile phone displaying with the QR code on top of the QR code scanner, the device enters the QR code authentication mode.

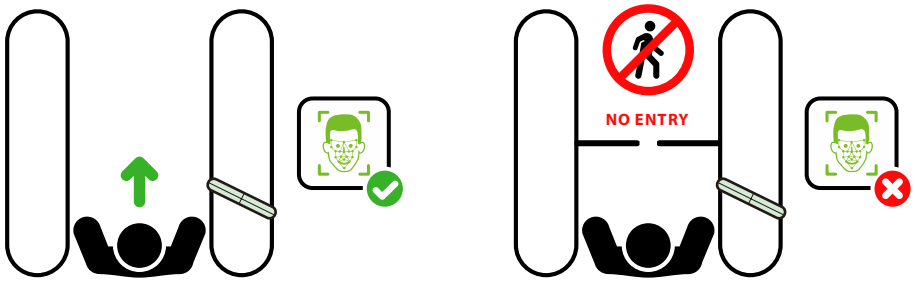


2.4 Facial Verification★

When the device is configured with a facial recognition module, in facial verification mode, the device compares the collected facial image with all the facial data registered in the device and sends it to the Access Controller.

During the verification process, please try to keep your face facing the camera. When registering your face, please face the camera and remain still until the entry is successful.

Verification is successful: Verification is failed:



3 Installation

3.1 Installation Tools

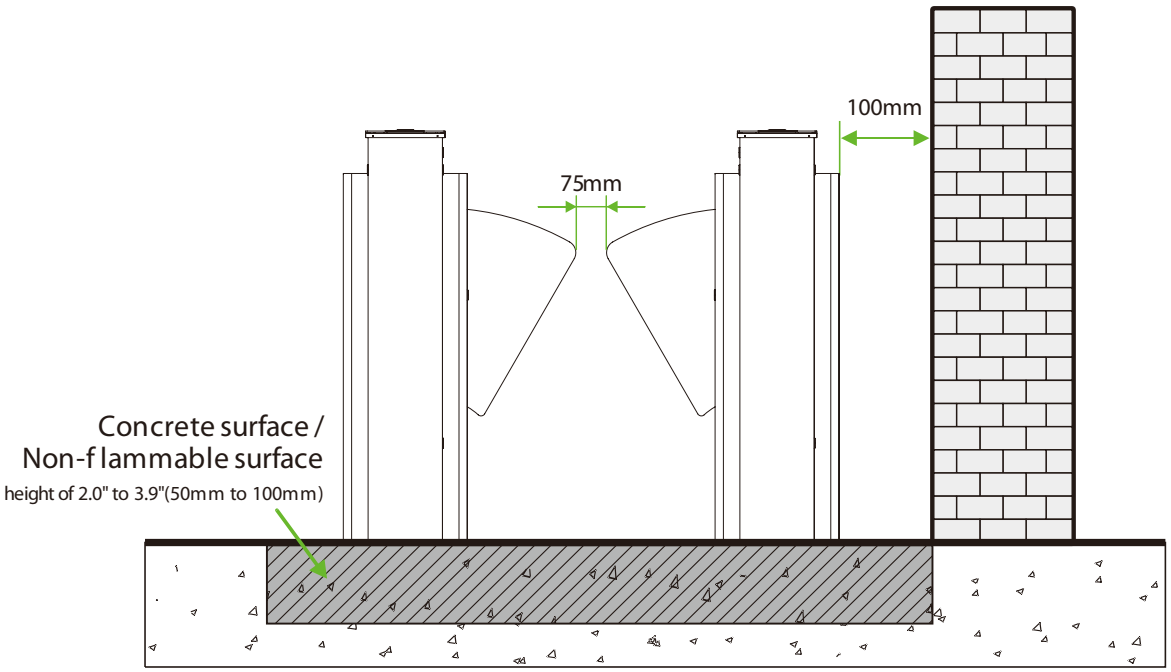
- Tapeline
- Marker Pen
- Pencil
- Percussion Drill
- Screwdriver
- Wrench
- Hex Wrench
- Cutting Machine

3.2 Installation Requirements

1. It is recommended that the turnstile must be installed on a horizontal solid platform with a height of **2.0" to 3.9"(50mm to 100mm)**.
2. It is recommended that the turnstile should not be used in the corrosive environment.
3. Make sure that the ground wire of the system is securely connected to avoid personal injuries or other accidents.
4. After installation, check if the connection has been done correctly at the connecting points of the ground wire, at the connector assemblies and wiring points of the circuits, as well as at each movable part of the turnstile. Any loose nuts, screws and other fasteners should be tightened in time to avoid any failures caused by long-time operations.

3.3 Installation Environment

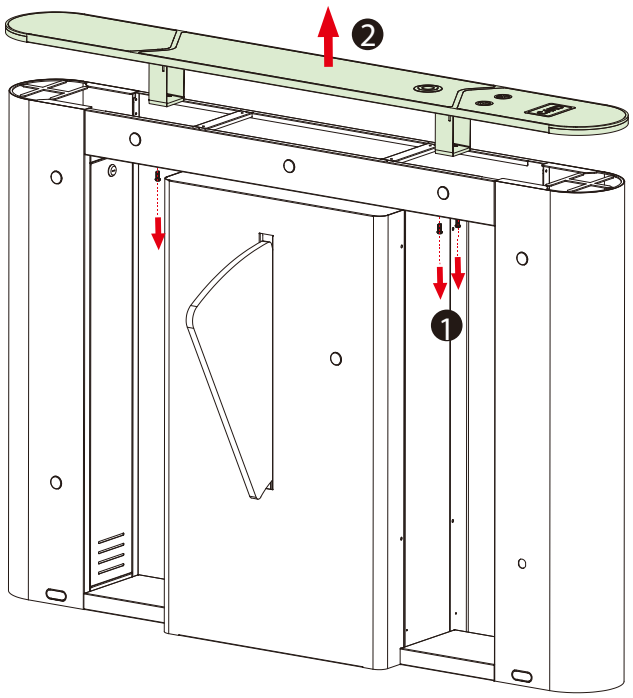
1. Before installation begins, prepare installation tools, check the device and the accessories, and clear the installation base.
2. Make sure that the appliance is mounted on a concrete surface or other non-flammable surfaces.
3. The installation position of the turnstile depends on its size. A distance of **3.9"(100mm)** between the turnstile and the wall needs to be reserved for ease of opening the top lid of the turnstile to perform maintenance and adjustment. The reference figure is shown below:



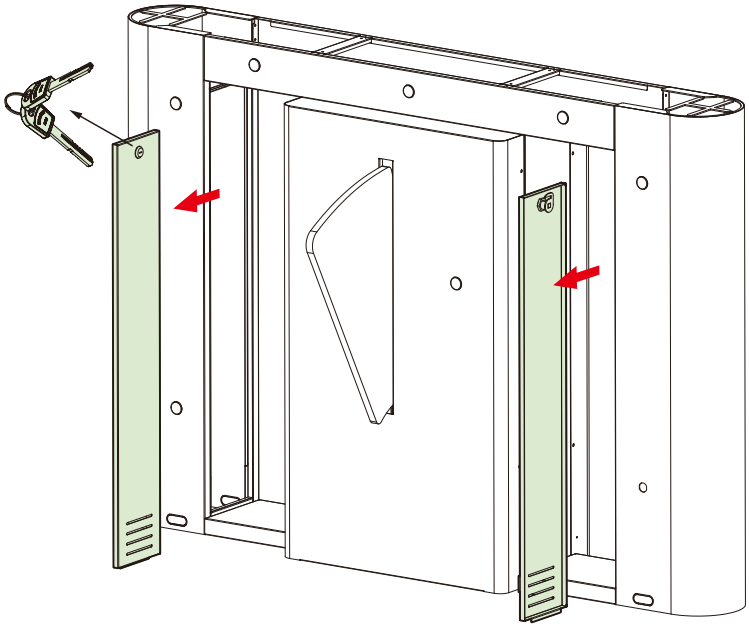
3.4 Installation Cabinet

Step 1 Remove the Top Lid and Chassis Cover

1. Loosen the four screws in the positions shown in the picture below. Then remove the top cover upwards.

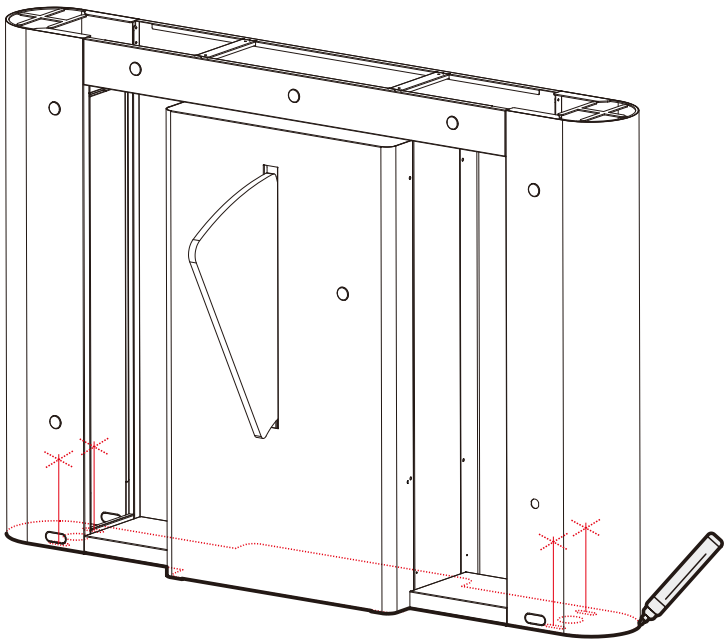


2. As shown below, use the key to open the chassis covers on both sides and remove them.



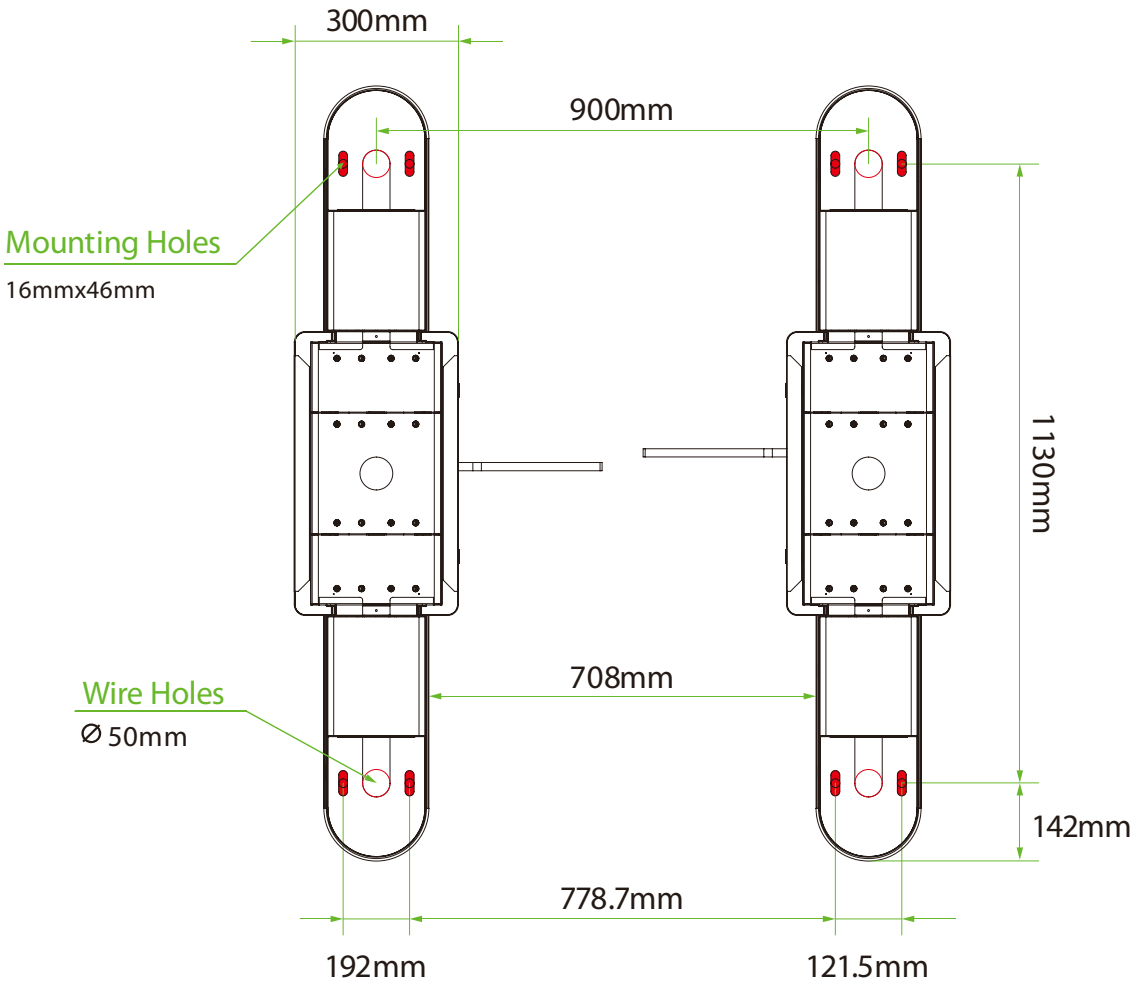
Step 2 Marker Position

Draw the location of the cabinet with a marker and mark each location of the mounting holes. There will be a total of four mounting holes and two wire holes per cabinet.



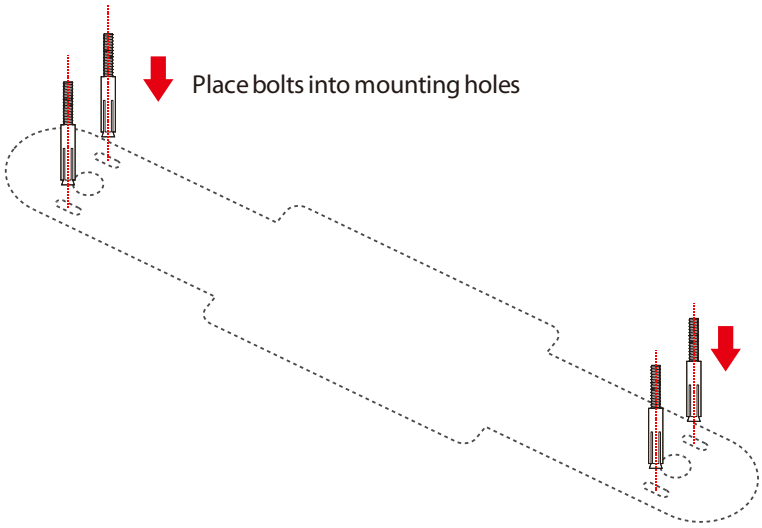
Step 3 Determine the mounting location

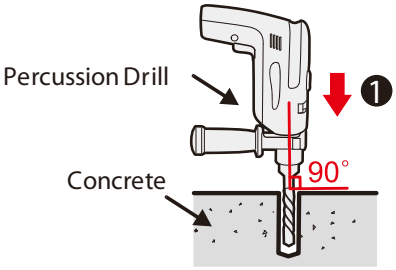
1. Please refer to the user's manual and complete the **power-on self test** operation before installation.
2. Then place the cabinet according to the mounting distances shown in the diagram below. Take care to measure the distance between the bottom inside walls of the cabinets on the entrance side and exit side of the channel and make sure that the measurements are consistent.

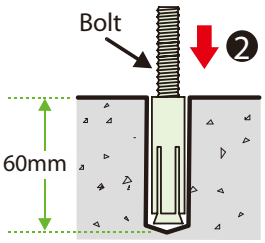


Step 4 Drill holes and place bolts

1. Using a concrete drill bit, drill the mounting holes 2.4" (60mm) in depth at the center of each marked location.
2. Then insert the bolts vertically into the mounting holes as shown at right.
3. Ensure expansion bolts are properly seated by applying three to five light taps with a rubber mallet until flush with the concrete surface. Verify anchor stability before proceeding.



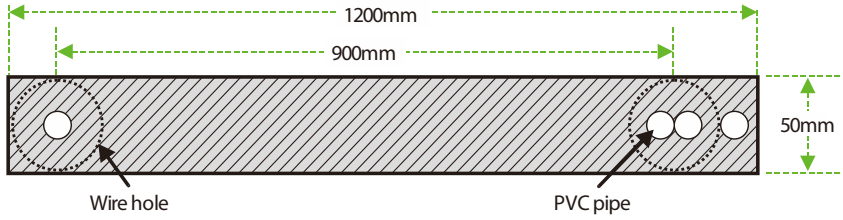




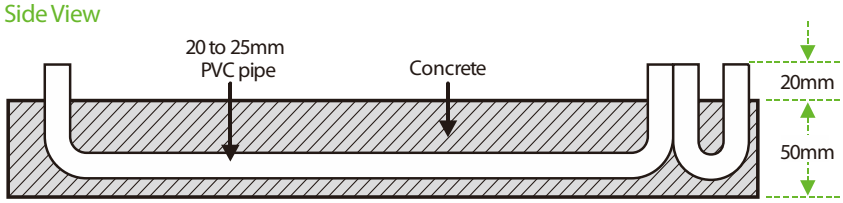
Step 5 Wireway laying

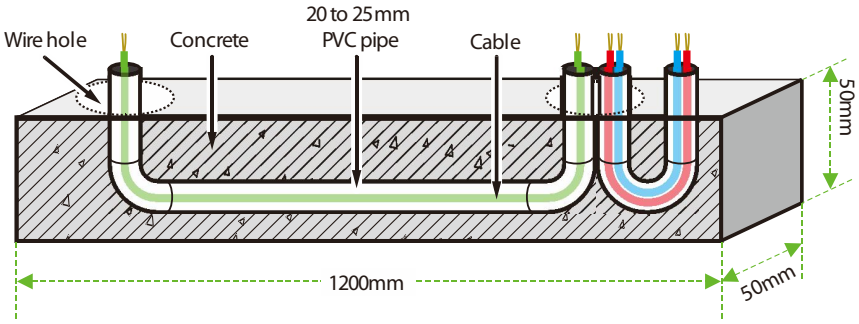
1. Dig a recess of **2.0" (50mm)** depth between the wire holes on both sides of the channel with the dimensions shown below. Recesses can be dug at positions **1** and **2**.
2. Then lay two **0.8" to 1.0" (20 to 25mm)** diameter PVC pipes as shown below.
3. After threading the cable out of the PVC pipe, pour concrete to f ix it in place.

Top View

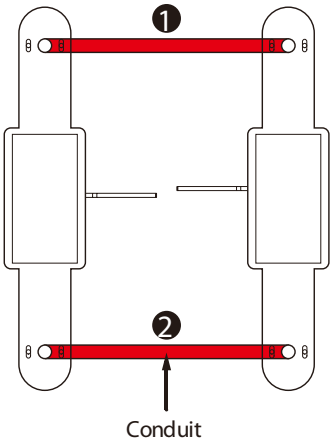


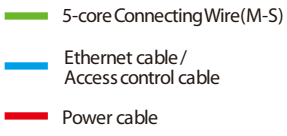
Side View





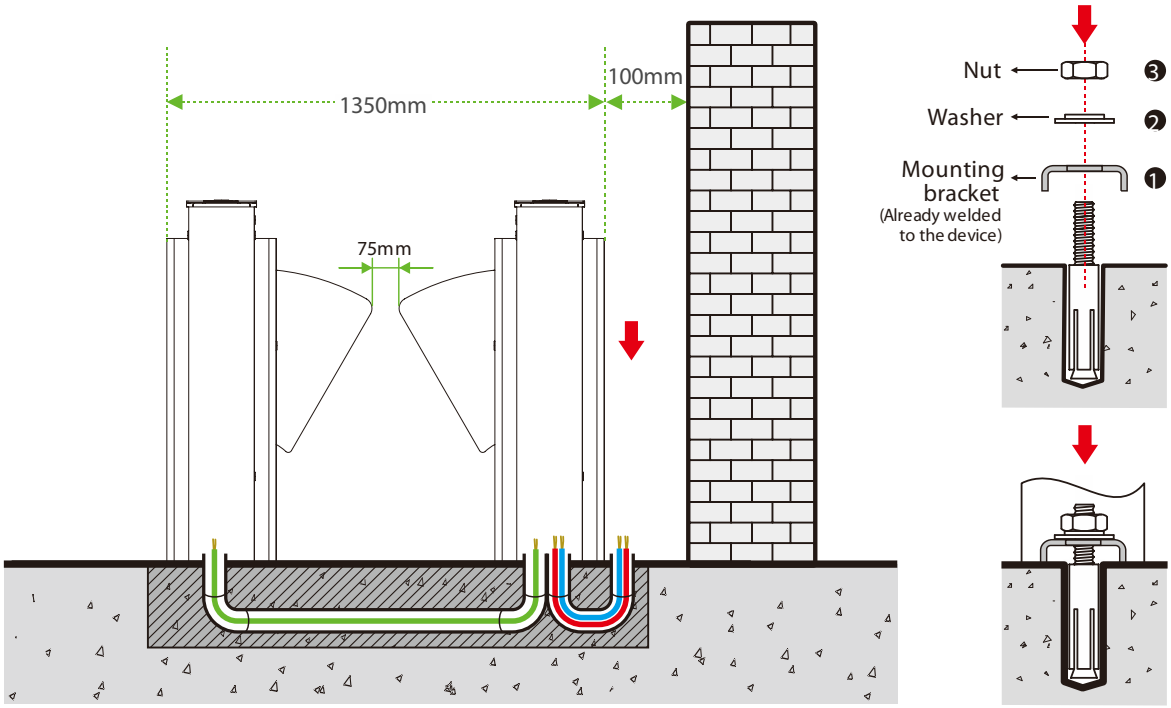
Position of the notch:





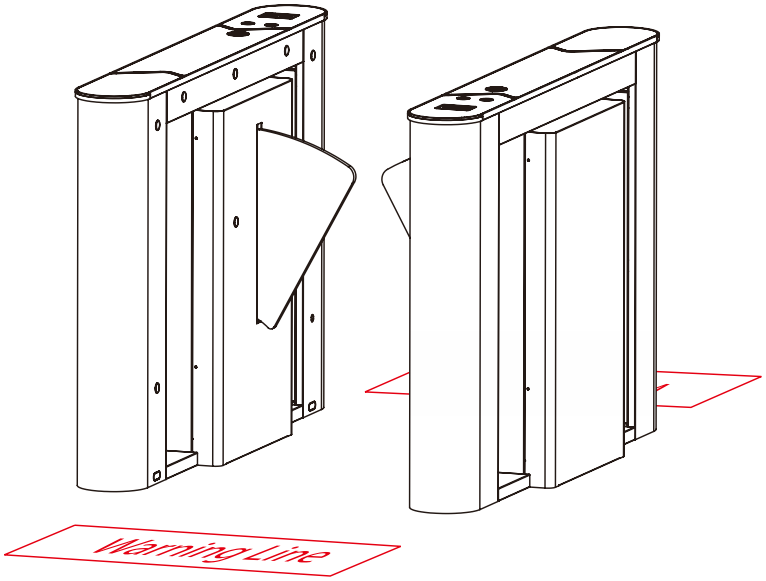
Step 6 Fixed cabinet

1. After laying the PVC pipe, place the cabinet alignment bolts back into the mounting position.
2. Then insert the eight washers and nuts into the bolts one by one.
3. Tighten the nuts to hold the cabinet in place. Don't tighten it completely until after you're sure it won't move anymore. The finished result is shown below:



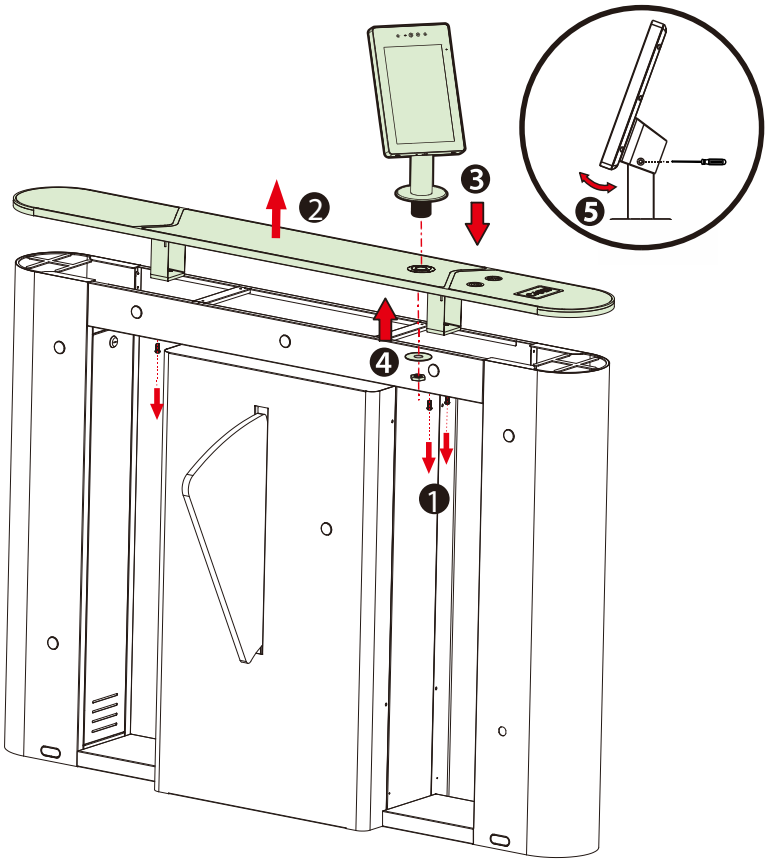
Step 7 Marking the warning line

1. It is recommended that warning lines be marked on the ground and used to alert users.
2. A warning line can alert users to wait outside the line until the previous user completes the verif ication process and passes through the turnstile.



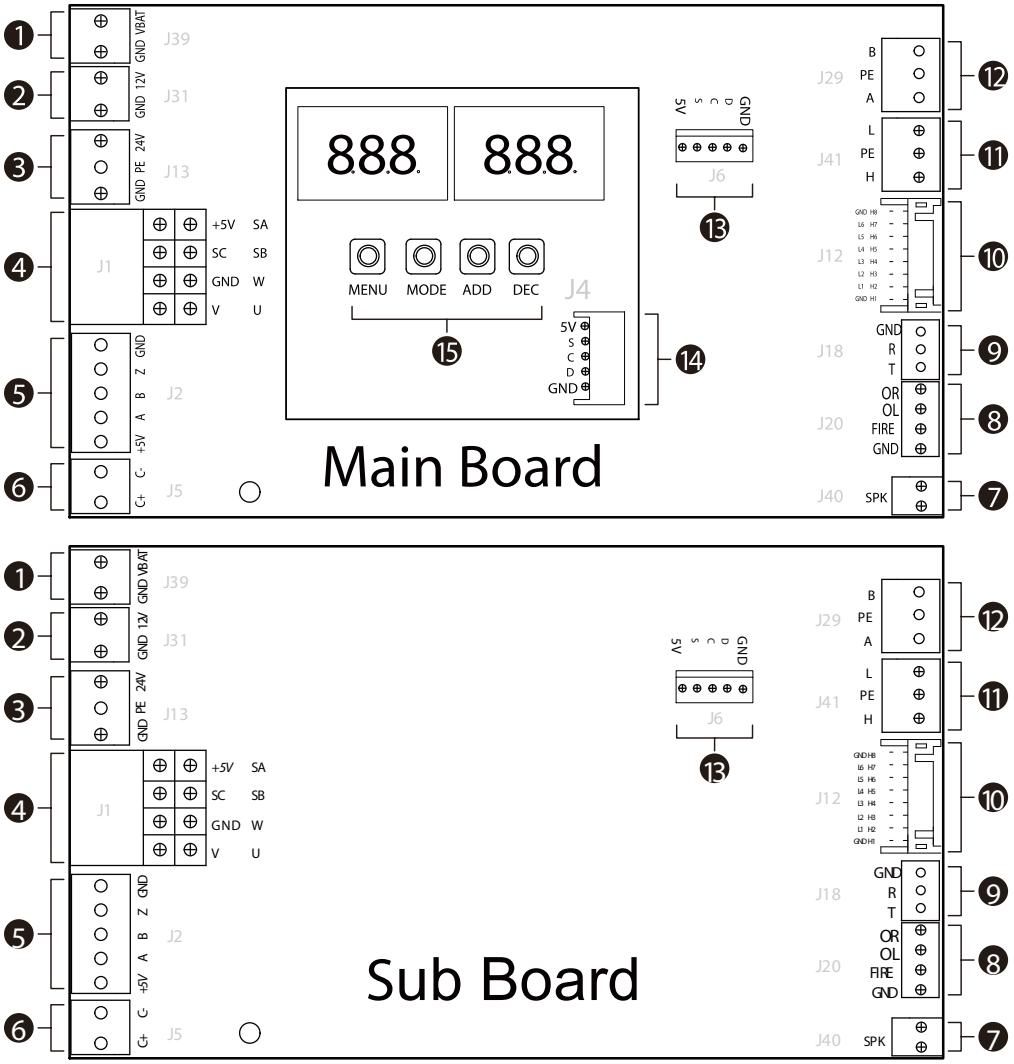
3.5 Facial Authentication Device Installation (Surface Mount)

1. Remove the top cover plate and route the unit's cables through the pre-drilled mounting holes.
2. Pass the mounting bracket through the mounting holes.
3. Place the gasket and nut and tighten the nut to secure the unit.
4. Adjust the unit to a suitable angle.



4 Terminal Description

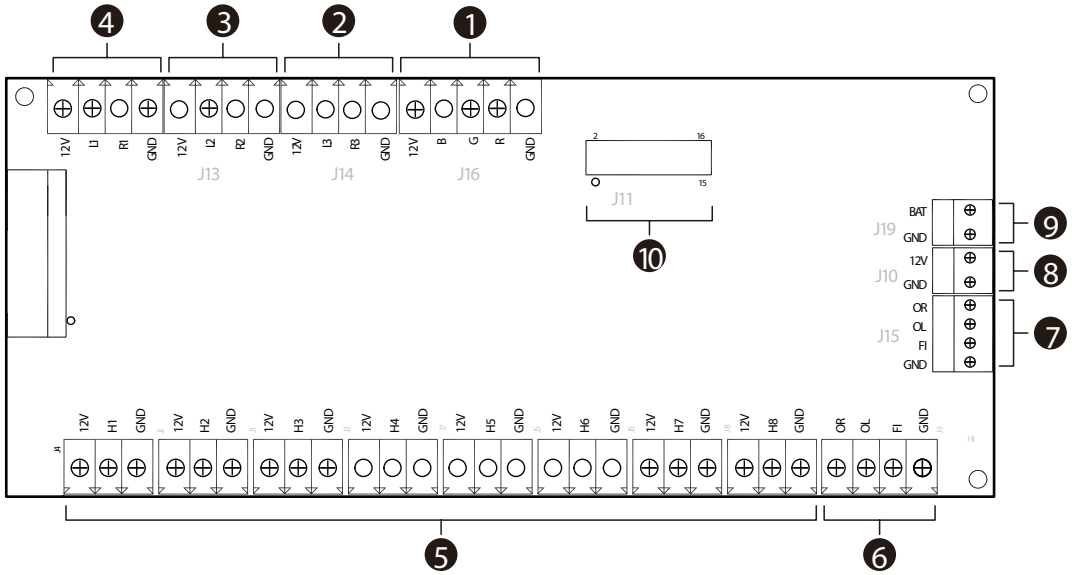
4.1 Main / Sub Board



NO.	Terminal	Descriptions
1	GND, VBAT	Fire panel interface
2	GND, 12V	12V DC power supply input
3	GND, PE, 24V	24V DC power supply input
4	+5V, SC, GND, V	Motor interface
	SA, SB, W, U	
5	+5V, A, B, Z, GND	Encoder interface
6	C+, C-	Clutch
7	SPK	Speaker

8	OR, OL, FIRE, GND	Fire Control Port, Right Open, Left Open
9	GND, R, T	RS232 communication
10	GND, L1-L6, GND; H1-H8	Interface board infrared communication interface
11	L, PE, H	CAN communication interface
12	B, PE, A	RS485 communication
13	5V, S, C, D, GND	Keypad interface
14	5V, S, C, D, GND	Keypad interface
15	MENU, MODE, ADD, DEC	Control buttons for setting menu parameters

4.2 IR Sensor Board

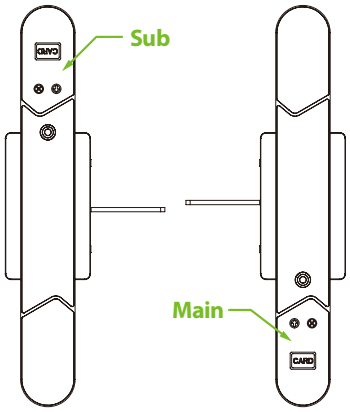


NO.	Terminal	Descriptions
1	12V, B, G, R,GND	Wing arm light bar interface
2	12V, L3, R3, GND	Top light interface
3	12V, L2, R2, GND	Top light interface
4	12V, L1, R1, GND	Top light interface
5	12V, H1-8, GND	Infrared sensor interface
6	OR, OL, FI, GND	External fire port
7	OR, OL, FI, GND	Alarm, fire opening port
8	12V, GND	12V DC power supply input
9	BAT, GND	Backup firefighting power interface
10	J11	Main board communication interface

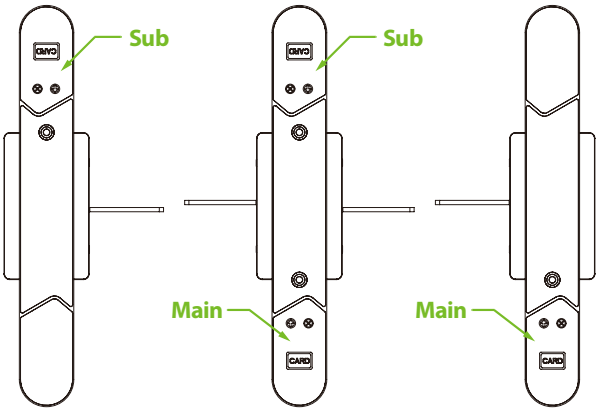
5 Wiring Instructions

5.1 Main-sub Location

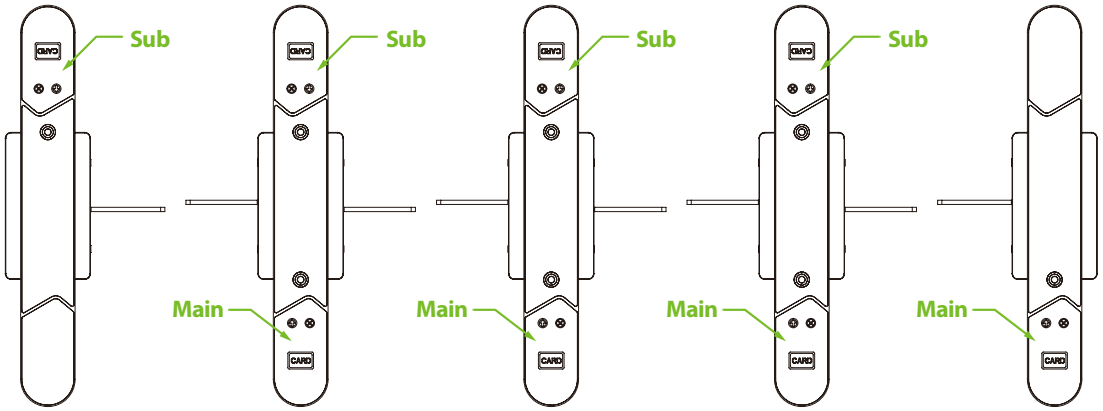
The positions of the Main and sub corresponding to single-lane, dual-lane and multi-lane are shown in the figure below.



Single-lane



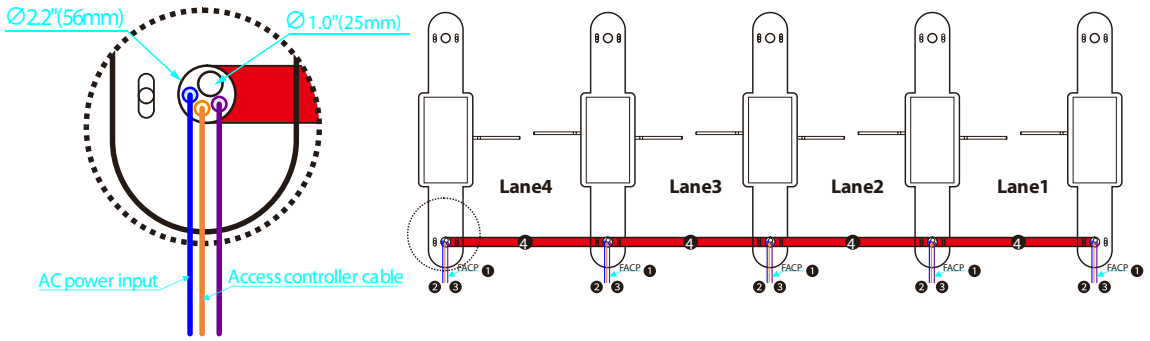
Dual-lane



Multi-lane

5.2 Slotting Position

For the different channels, the slotted locations are shown below.



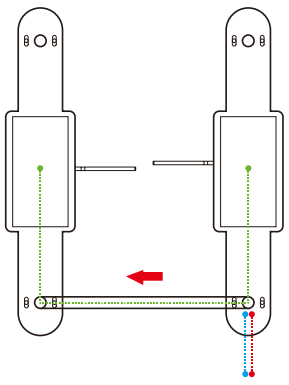
Conduit hole maximum can fit 1" conduit and 2 pcs $\frac{1}{2}$ " conduits.

1. 8-core connecting wire and LAN cable through 1" conduit together.
2. Folded 8 pin connector during through conduit.

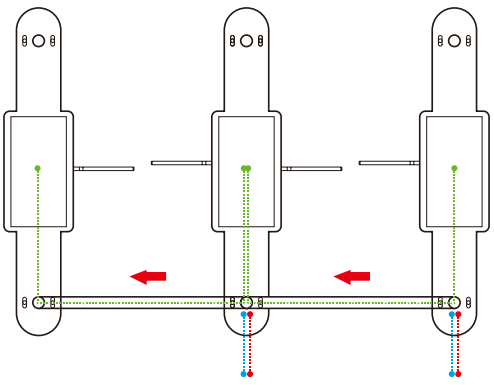
❶ $\frac{1}{2}$" conduit reserved for FIRE/Relay input
❷ $\frac{1}{2}$" conduit reserved for AC 110V input
❸ $\frac{1}{2}$" conduit reserved for reader/access controller wiring
❹ 1" conduit used for connection wire harness between M/

5.3 Wiring Methods

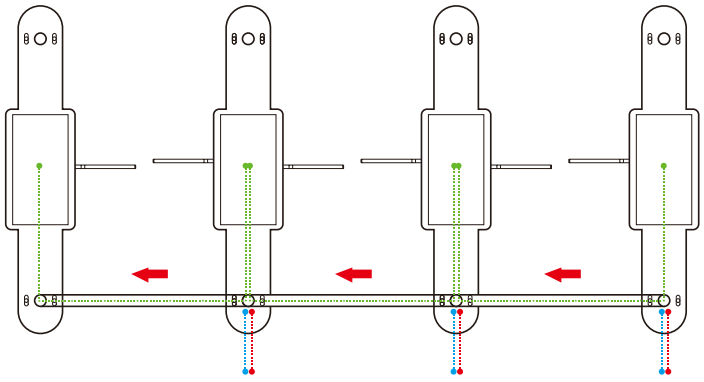
The wiring principle is to connect the Main device to the sub device and communicate via the ECU-panel connection wire. Each Main device is then powered individually. The following diagram shows how the different channels are wired.



Single-lane



Dual-lane



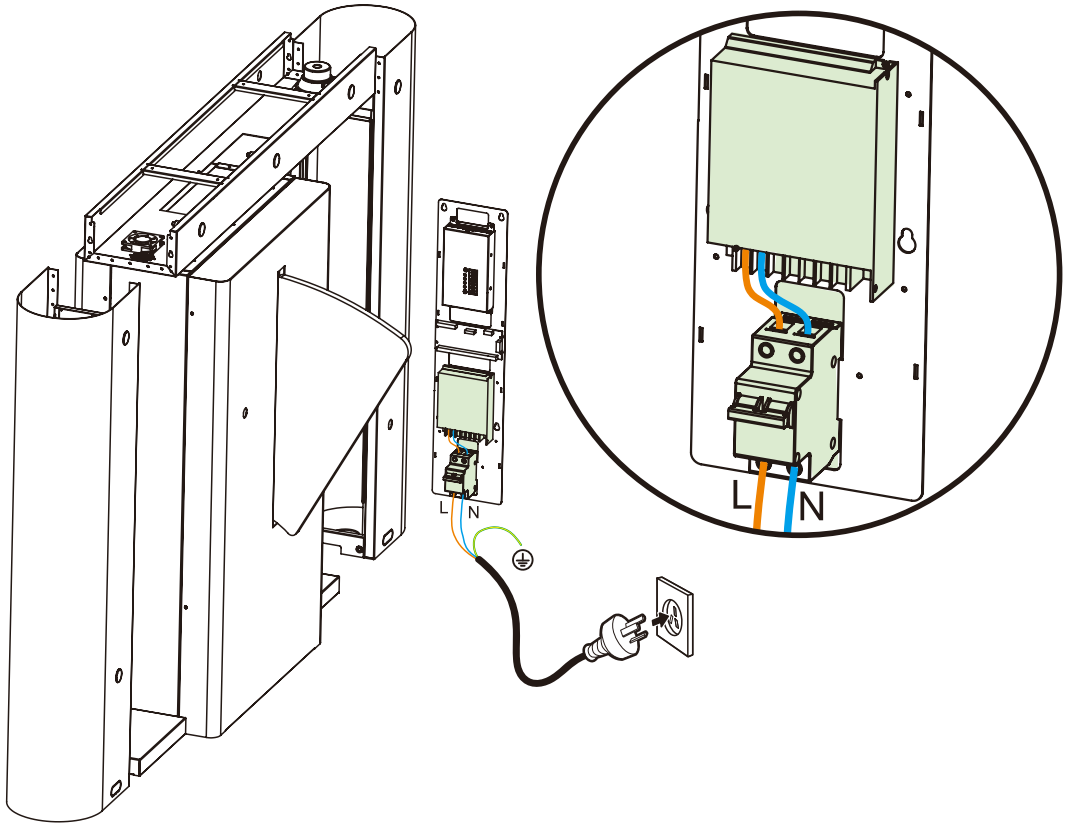
Multi-lane

Wiring Instructions

- 5-core connecting wire(M-S)
- AC110/220V input
- Ethernet cable /Access control cable

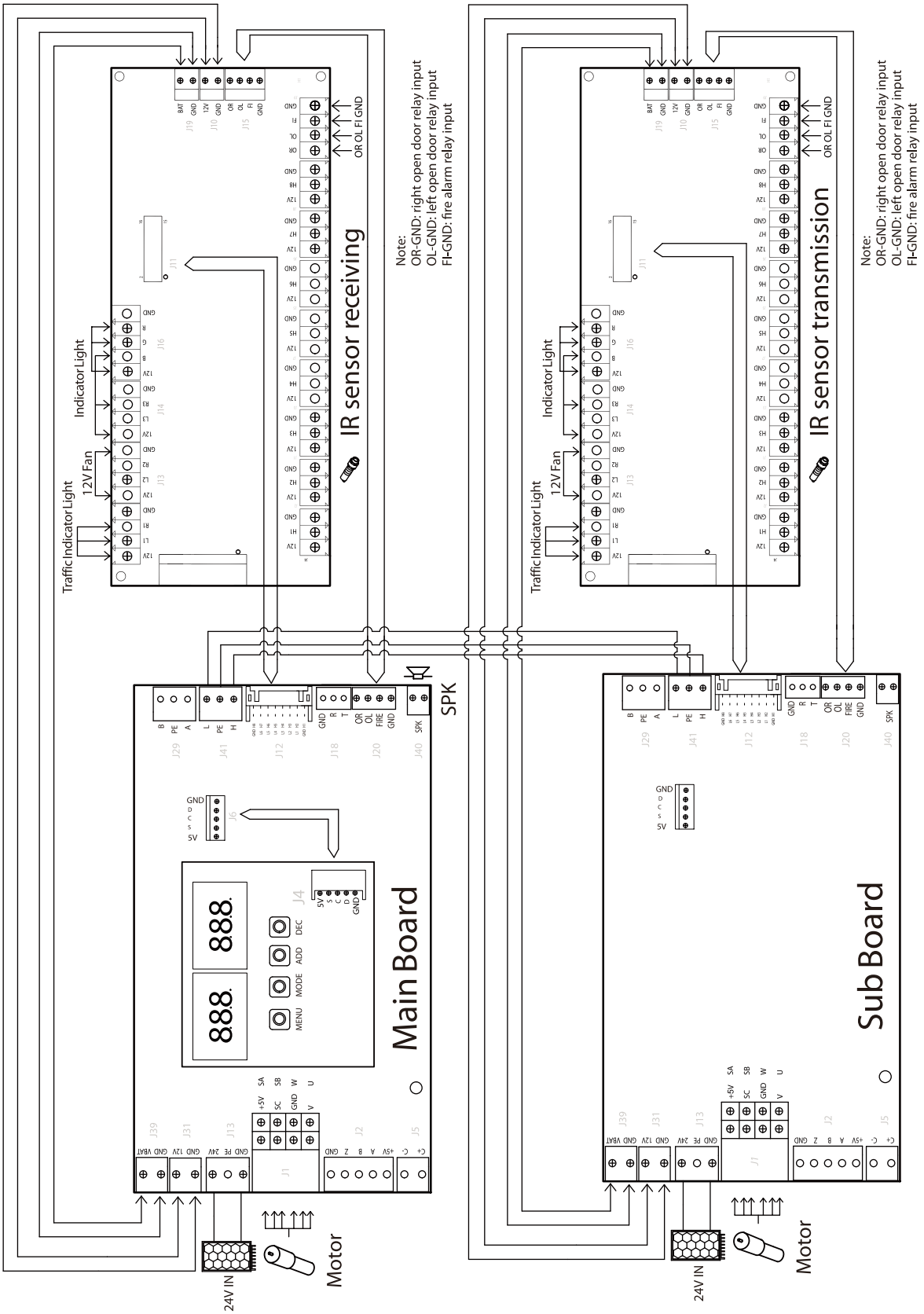
5.4 Power and Circuit Breaker Wiring

WARNING: Before connecting or servicing the power supply, ensure all power sources are **disconnected** to prevent electric shock.

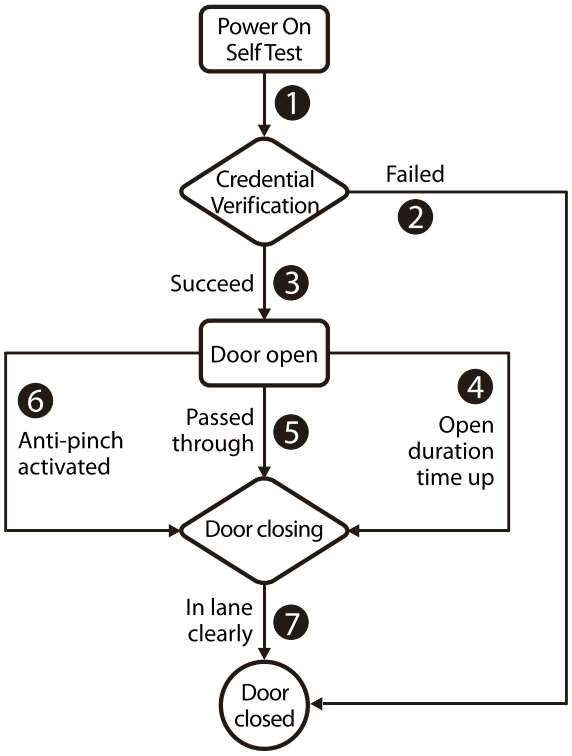


- The primary power supply (120Vac or 240Vac) must be hard-wired and properly grounded. Ensure the device voltage matches your local supply.
- Use a dedicated circuit breaker (air circuit breaker or equivalent) rated for your supply voltage and current.
- All wiring should be performed by a licensed electrician in accordance with local electrical codes and standards.
- Always use the recommended wire gauge and approved components as specified in this manual.
- **Note:** Failure to follow these instructions may result in equipment damage, electric shock, or fire.

5.5 System Wiring Diagram



6 Operation Process



1. POST (Power On Self Test)

When powering up the unit, wait approximately 30 seconds for the system to perform a POST (Power On Self Test) procedure. If no problems are detected, the unit will operate normally. If a fault is detected, the system will display a relevant message on the LCD display so that the user can quickly understand and solve the problem. (Reference 5.4 Power and Circuit Breaker Wiring for connecting the air switch and power supply.)

2. Credential Verification

After the device power-on self-test is completed, it enters the standby state.

When the user places a valid card in the swipe area, i.e. the device recognizes a valid card. The LCD display will show success and a buzzer will give a positive audible indication to the pedestrian that it has been successfully validated. The card reader then sends a signal to the access controller requesting permission to pass through the channel. The access controller will send a signal to the revolving door control panel. After receiving the signal from the card reader and the Infrared Sensor, the Turnstile Control Board will send valid control signals to the servo motor driver, and will open the barrier.

1) Verification Success

When the verification is successful, the door will open.

2) Validation Failure

When verification fails, the door remains closed.

Note: If the system is in forbidden passing mode, the mode indicator light will turn red, and the Turnstile Control Board will not accept card signals.

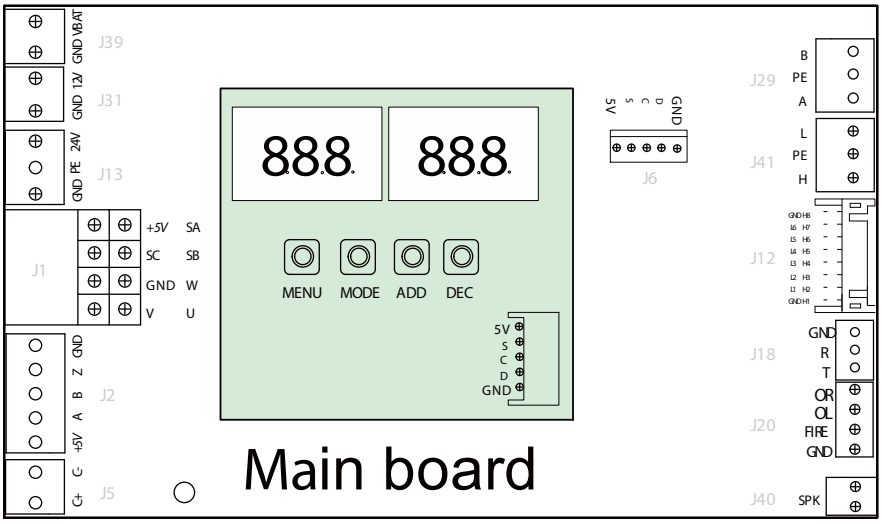
3. Passed Through

After the passenger passes the channel in the direction indicated by the flap barrier, the Infrared Sensor will keep detecting the movement of the pedestrian throughout the passage and continuously monitors the passenger until they have exited the passage.

If the pedestrian enters the passage but forgets to verify identification, or if the card by the pedestrian is invalid, the system will prompt an audible alarm to warn the pedestrian to stop passing. The alarm signal will not be cancelled until the passenger retreats from the passage. The pedestrian can pass through the passage only after a valid card is successfully verified.

7 Machine Operation

7.1 Operation Buttons Description



There are 4 keys on the Main motor driving controller, "MENU", "MODE", "ADD" and "DEC".

Operation Buttons Description:

- **MENU:** Used to access the Settings menu and confirm modified values
- **MODE:** Returns to the previous menu and cancels the current operation.
- **ADD:** Navigate to the upper menu item and increase the value.
- **DEC:** Navigate to the lower menu item and decrease the value.

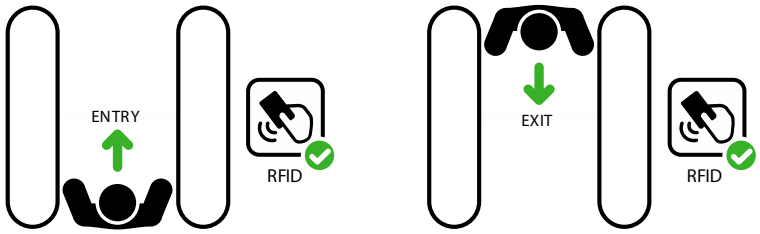
7.2 Menu Parameter Settings

01EXXX : Display Mode

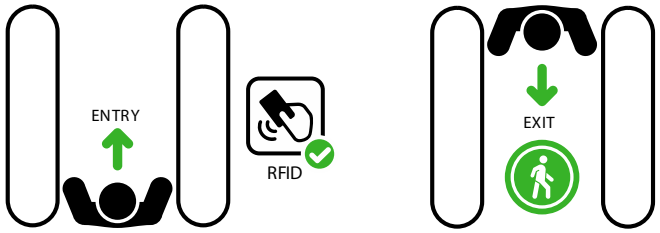
- **01E000:** Displays current position of the gate
- **01E001:** Infrared input signal
- **01E002:** Controls input signal
- **01E003:** Test mode (the digital LED displays "---" in the test mode)
- **01E004:** Version number (Defaults to 01E004 after power failure and reboot)

02EXXX : Device Mode

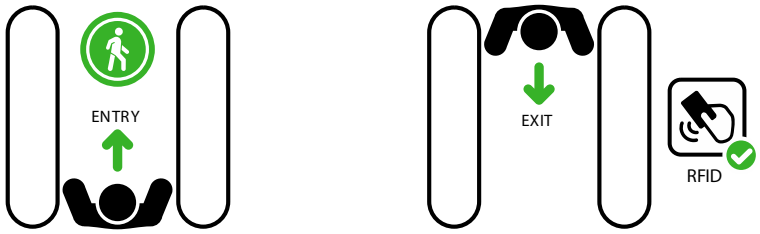
- **02E001:** Two-way controlled, both need verification (Default)



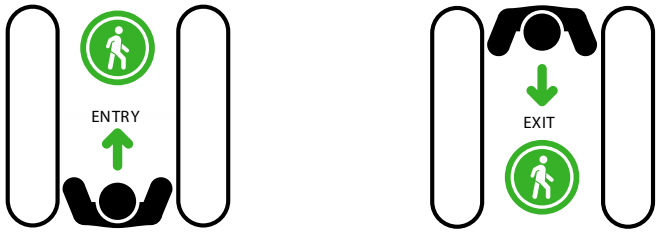
- **02E002:** In need verification, out free



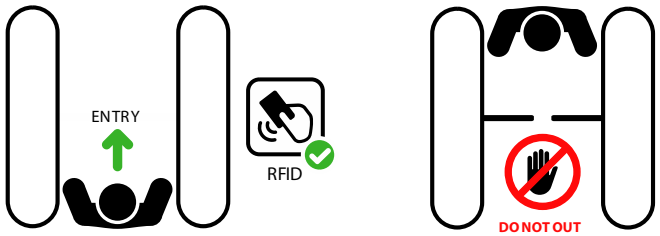
- **02E003:** In free, out need verification



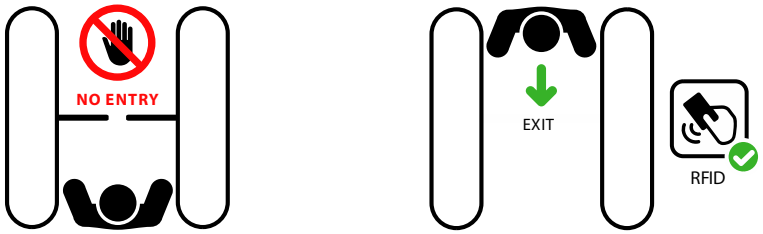
- **02E004:** Two-way free



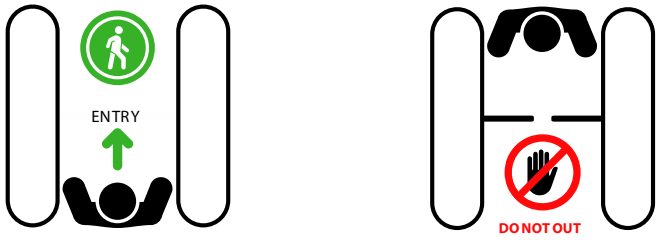
- **02E005:** In need verification, out prohibited



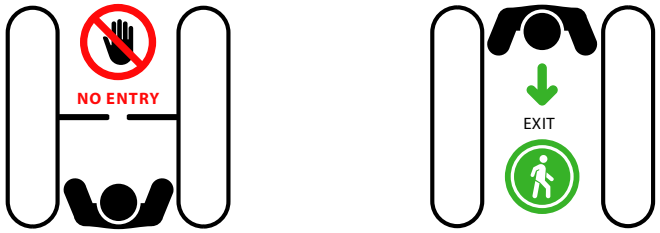
- **02E006:** In prohibited, out need verification



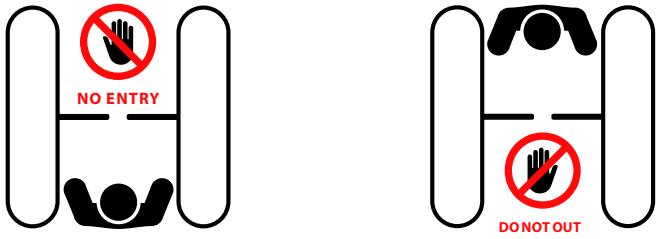
- **02E007:** In free, out prohibited



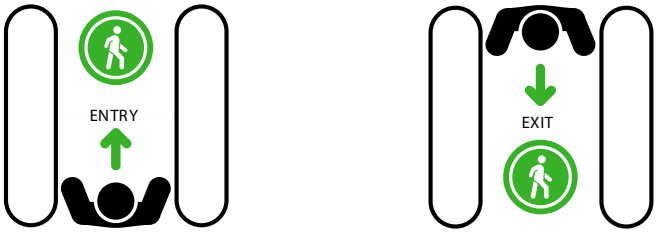
- **02E008:** In prohibited, out free



- **02E009:** Two-way prohibited

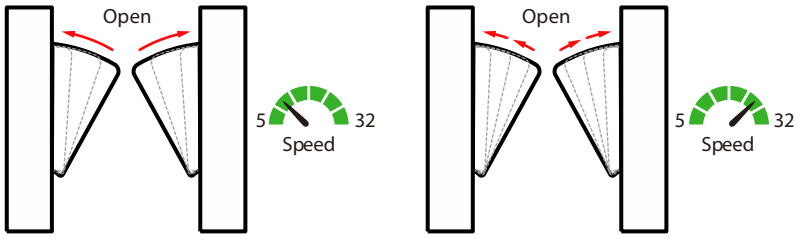


- **02E010:** Two-way normally open



03EXXX : Gate Opening Speed

To adjust the gate opening speed, you can set a larger number for a faster opening. The Gate Opening Speed can be configured between **5** and **32**, with a default value of **22**.



04EXXX : Gate Opening Deceleration Distance

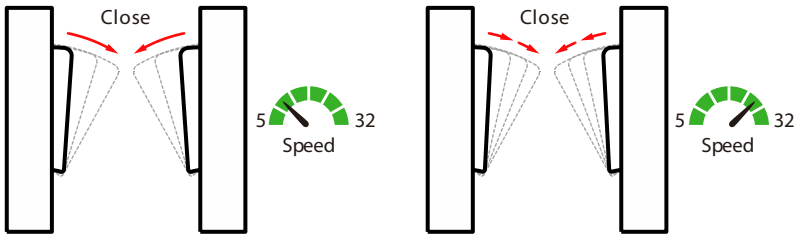
A larger number increases the deceleration time, enhancing the stability of the wing arm operation. The Gate Opening Deceleration Distance can be set between **0** and **50**, with a default value of **18**.

05EXXX : Gate Opening Compensation Speed

This setting is used when the wing arm cannot fully open or shakes during operation. A higher value increases the compensation speed. The Gate Opening Compensation Speed can be set between **0** and **50**, with a default value of **18**.

06EXXX : Gate Closing Speed

To adjust the gate closing speed, you can set a larger value for a faster closing. The Gate Closing Speed can be configured between **5** and **32**, with a default value of **22**.



07EXXX : Gate Closing Deceleration Distance

A larger number increases the deceleration time, enhancing the stability of the flap barrier operation. The Gate Closing Deceleration Distance can be set between **0** and **50**, with a default value of **18**.

08EXXX : Gate Closing Compensation Speed

This setting is used when the wing arm cannot fully close or shakes during operation. A larger number results in faster compensation speed. The Gate Closing Compensation Speed can be set between **0** and **50**, with a default value of **18**.

09EXXX : Main and Sub Settings

This setting is used to set the Main and Sub device. This setting is not changed after factory restoration (20EXXX).

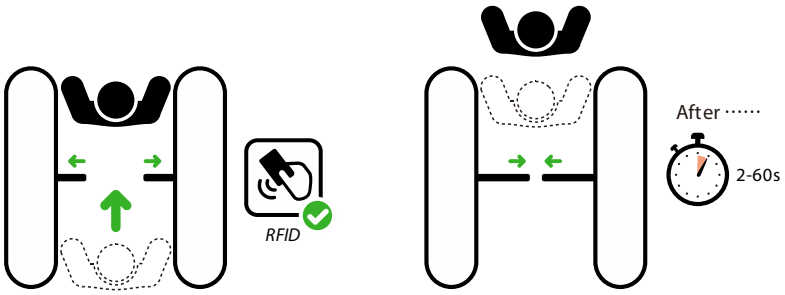
- **09E001 :** Main device
- **09E002 :** Sub device

10EXXX : RS485 Address

It can be set between **0** to **254** and the default value is **0**.

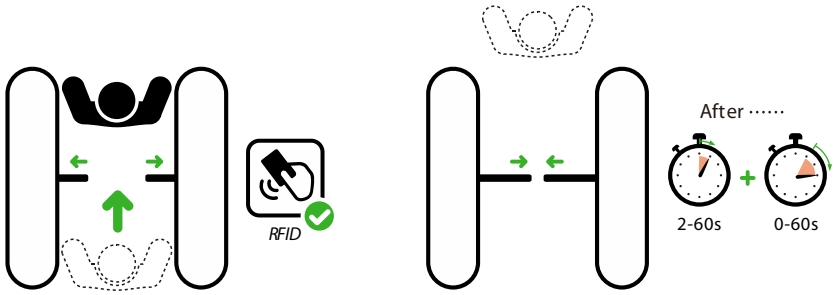
11EXXX : Open Duration Time

The valid time period after a successful verification can be configured. Once the set time is reached, the flap barrier will automatically close. The larger the value set,, the longer the valid time. The valid value ranges from **2** to **60** seconds, with a default value of **5** seconds.



12EXXX : Gate Closing Delay Time

Set the delay time of gate closing after passing. The valid value for gate closing delay time can be set between **0** to **60** seconds and the default value is **0** seconds.



13EXXX : In Place Position Adjustment

This setting is used to adjust the wing arm to close in place/open in place. **Note:** The flap barrier needs to be in the corresponding position during commissioning.

Swing Barrier:

- **13E001 :** Adjustment for fully closed position
- **13E002 :** Adjustment for right position
- **13E003 :** Adjustment for left position

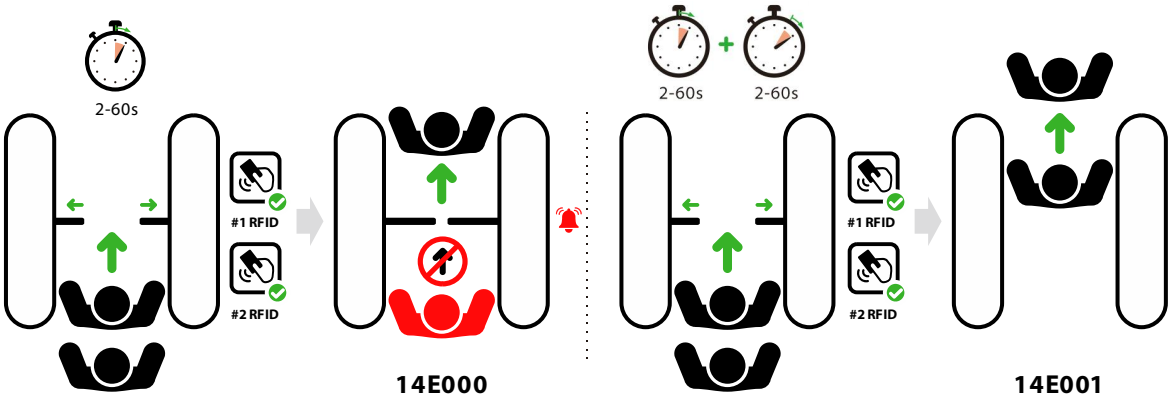
Flap barrier:

- **13E001 :** Adjustment for fully closed position
- **13E002 :** Adjustment for fully open position

14EXXX : Gate Opening Memory

When more than two legal access signals are given at the same time (including the same direction and the opposite direction), the system will remember all pass requests and complete each pass in turn.

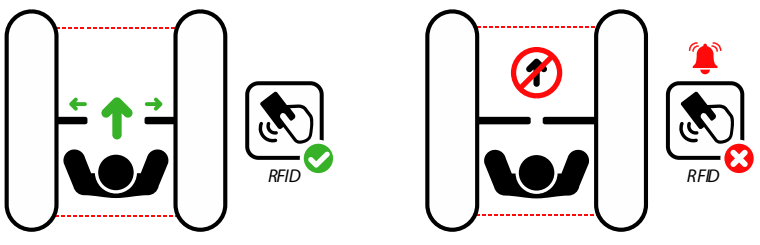
- **14E000:** Close (Default)
- **14E001:** Open



15EXXX : Authentication in Lane

It allows pedestrian verification during the IR sensor triggered.

- **15E000:** Allow (Default)
- **15E001:** Forbidden



Allow Authentication in Lane (default)

Forbidden Authentication in Lane

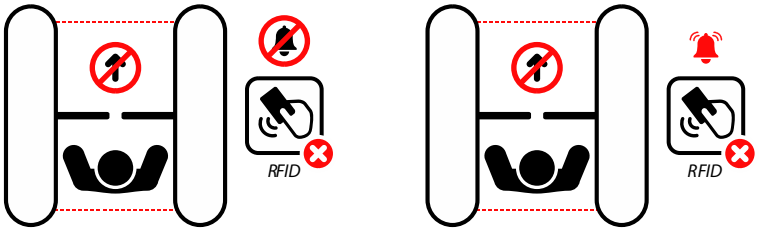
16EXXX : Volume Setting

Volume Setting is used for adjusting the volume of the device. The higher the value is set, the louder the volume. The valid value for Volume Setting can be set between **1** to **100** and the default value is **70**.

17EXXX : Close Alarm Tone

When the alarm tone is turned off, the Turnstile will not emit an alarm tone when encountering an alarm situation. The following figure shows an example of the prohibition of authentication in lane:

- **17E000:** Close
- **17E001:** Open (Default)



Close Alarm Tone **Open Alarm Tone (default)**

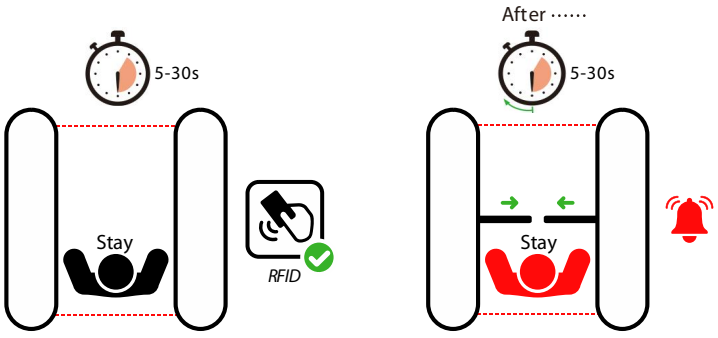
18EXXX : Infrared Logarithm

This setting is not changed after restoring the factory settings (20EXXX).

- **18E001 to 18E008:** From 1 to 8
- **18E022:** Change to 22 if greater than 8

19EXXX : Stay Duration Time

Set the duration of stay in the channel after successful verification. After exceeding the set time, the device will alarm to indicate. The valid value for Stay Duration Time can be set between **5** to **30** seconds and the default value is **10** seconds.



20EXXX : Force Adjustment

The larger the number, the greater the efficiency of the gate opening and closing force. The valid value for Force Adjustment can be set between **10** to **100** and the default value is **40**.

21EXXX : Fire Signal Setting

According to the external fire device, select the corresponding type of trigger mode.

- **21E000:** Right open (Default)
- **21E001:** Left open

22EXXX : Locking travel (valid for swing barrier)

0 - No locking, suitable for mechanisms without a clutch.

- **22E000 to 22E099:** From 0 to 99 (Default: 0)

23EXXX : Locking method (valid for swing barrier)

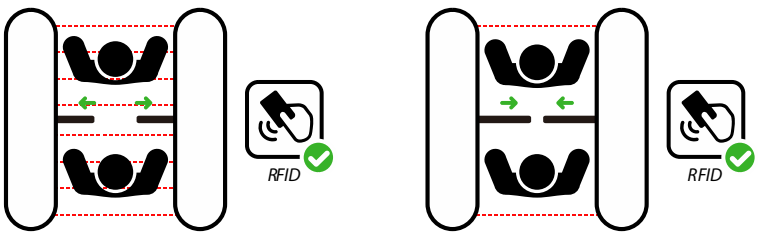
- **23E000:** Automatic unlocking (Default)
- **23E001:** Authorized unlocking

24EXXX : Restore Factory Setting

- **24E001:** Restore factory settings
- **24E002:** Restart

25EXXX : Anti-pinch Area Setting

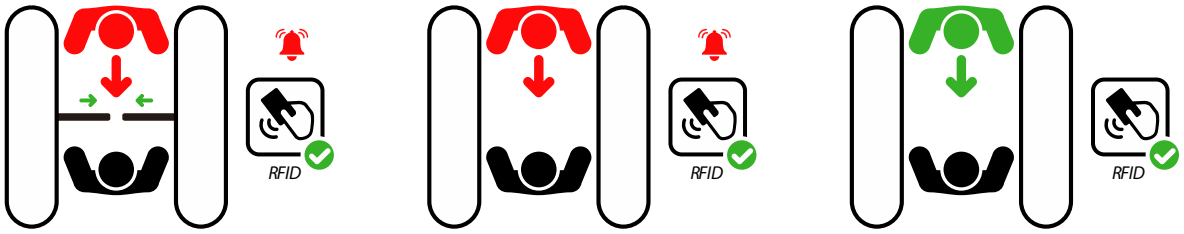
- **25E000:** All Infrared anti-pinch (Default)
- **25E001:** First and last pair are not anti-pinch



26EXXX : False Direction Entry

The False Direction Entry (26E000) will only be effective when the Anti-pinch Area Setting is set to (25E001).

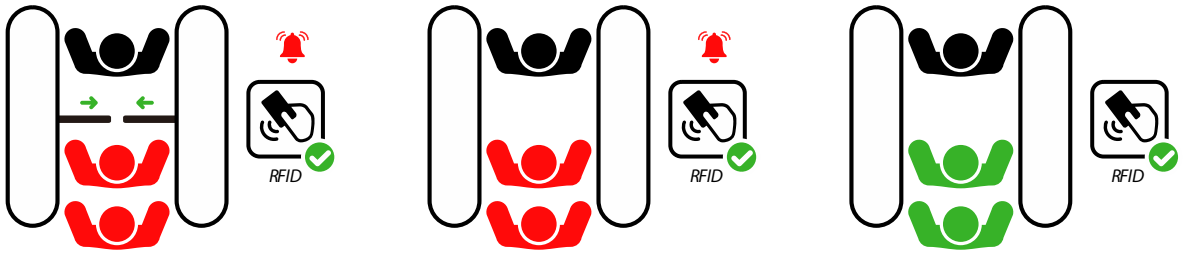
- **26E000:** Close (just for Wing Gate)
- **26E001:** Only alarm (Default)
- **26E002:** No detection



27EXXX : Anti-tailgate Setting

The Anti-tailgate Setting (27E000) will only be effective when the Anti-pinch Area Setting is set to (25E001).

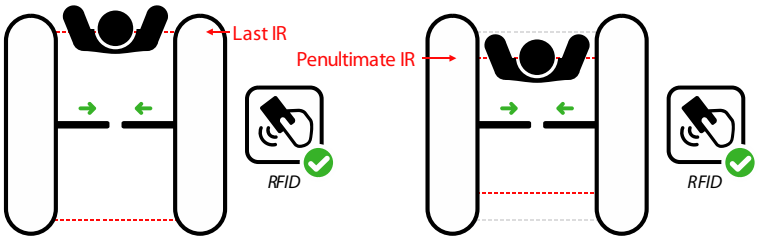
- **27E000:** Close (just for Wing Gate)
- **27E001:** Only alarm (Default)
- **27E002:** No detection



28EXXX : Gate Closing Position

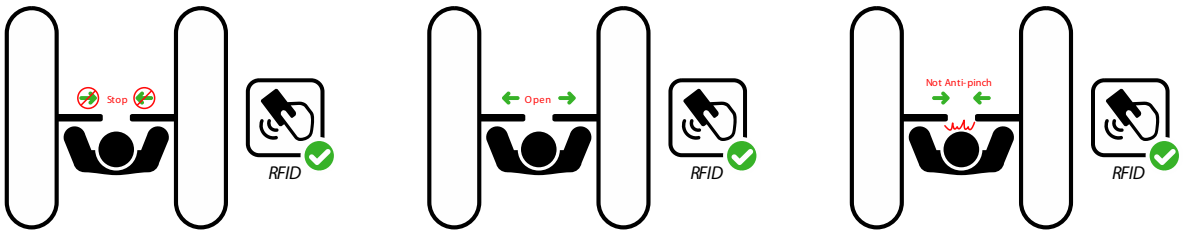
The Gate Closing Position (28E000) will only be effective when the Anti-pinch Area Setting is set to (25E001).

- **28E000:** Last pair (Default)
- **28E001:** Penultimate pair



29EXXX : Anti-pinch Action Setting

- **29E000:** Stop
- **29E001:** Open (Default)
- **29E002:** Close the function



8 Maintenance

8.1 Chassis Maintenance

The chassis is made up of stainless steel or cold rolled sheet. If it is used for substantial period, then there may be rust stains on its surface. Regularly clean the surface with a clean cloth carefully. Coat the surface with anti-rust oil and do not cover the infrared sensor.

8.2 Movement Maintenance

Before doing maintenance, turn off the power. Open the door, wipe the surface dust, and apply lubricant for smooth movement.

8.3 Power Supply Maintenance

- **Switch off the power supply before maintenance.**
- **Check the power plug connection, if found loose, fix it properly.**
- **Do not change any connection position randomly.**
- **Check the external power supply insulation periodically.**
- **Do periodic check for any kind of leakage.**
- **Check if the technical parameters of interface are normal.**
- **Check the service life of the electronic components and replace accordingly.**

Caution: All the above-mentioned maintenance methods for swing barrier must be carried out by a professional technician, especially the movement and the electric control part. For ensuring operational safety, first switch off the power supply when the barrier is not in use. Perform the safety check on a weekly basis to ensure that the turnstile is safe and ready for user operation.

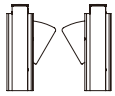
9 Troubleshooting

No.	Failure Descriptions	Analysis and Solution
1	The mode indicator light does not respond or the indication is incorrect.	Check that the control panel mode indicator wiring is correct or that the contact is poor.
2	After swiping the card, there is only a speed gate unlocked.	Check the mode setting of the Main and sub devices and the 8-core, 2-core connection lines. See the wiring diagram for the specific connection circuit.
3	The barrier doesn't close when the opening delay time is ended.	Check to see if the opening delay time is too long or whether the IR sensor is covered.
4	When the gate is self-tested, the wing arm is not in the normal closing position!	In the process of self-test, there are obstacles, please remove the obstacles, restart the self-test after power-on!

10 Packing List

The package consists of the following items:

- **FBL6000 Pro**

	FBL6000 Pro (Main and Sub)	2
	Power Cable	1
	Card	1
	Expansion Screw M12*100	8
	Washer	8
	Expansion Screw Washers	8
	Stainless Steel Maintenance Wipes	1
	Hex Wrench	1

- **FBL6200 Pro**

	FBL6200 Pro	1
	Power Cable	1
	Card	1
	Expansion Screw M12*100	4
	Washer	4
	Expansion Screw Washers	4
	Stainless Steel Maintenance Wipes	1
	Hex Wrench	1

Revision History

Revision	Date	Author	Reviewer	Description
V1.0	08/29/2025	Julia.Huang		Original Document

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