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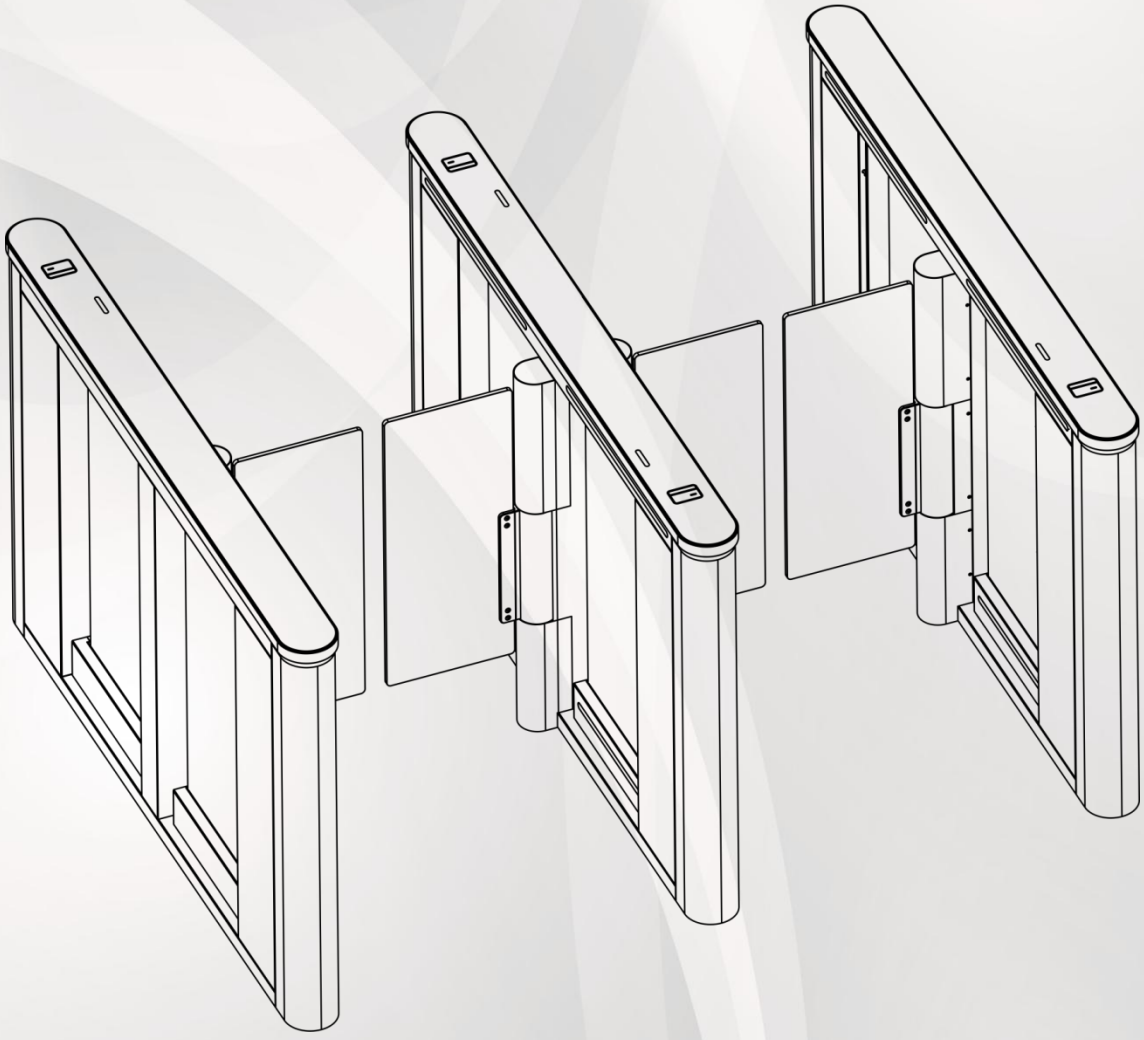
User Manual

OTSG9000/SBTL8000 Series Swing Barrier

Applicable Model(s): OTSG9000, OTSG9011, OTSG9022, OTSG9033, OTSG9200, OTSG9211, OTSG9222, OTSG923
SBTL8000, SBTL8200, SBTL000WP, SBTL8200WP

Version: 1.0

Date: December 2025



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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.

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- 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.

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- 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.

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1 Overview

The OTSG/SBTL series swing barrier provides advanced access control, blending robust security with an efficient passage experience. The transparent acrylic swing barriers and full aluminium top cover with tempered glass lid create a modern, premium aesthetic, and the SUS304 stainless steel chassis ensures durability and long-term stability.

What sets this series apart is its comprehensive integration of safety and deployment efficiency. Driven by a high-precision servo motor, the swing barrier provides smooth movement with an adjustable opening and closing time of 0.3 to 0.6 seconds, enabling efficient passenger flow while maintaining strict access control. The OTSG/SBTL series is equipped with 12–18 pairs of infrared sensors for precise pedestrian detection and provides an adjustable lane width of 660 mm (standard) to 1000 mm (optional), accommodating diverse accessibility needs. The swing barrier is pre-assembled for rapid installation and integrates with software to form a comprehensive access control solution.

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1.1 Features

- **Multiple Under mount Biometric Authentication Methods**

  Offers versatile under mount plates supporting facial authentication, QR code, RFID verification to meet diverse credential requirements.

- **Infrared Sensor**

  Up to 18 pairs of IR sensors provide full-area coverage for enhanced accuracy and safety.

- **Elevated Swing Arm**

  Supports elevated barrier height with a maximum of 1,800mm ground clearance, preventing unauthorized entry or reverse flow.

- **Built with Tempered Glass**

  Scratch-resistant, abrasion-proof and for years of reliable, intensive use.

- **Stainless Steel Chassis**

  Rust-proof and corrosion-resistant for enhanced durability.

- **Water Resistant**

  Features an inverted motor with waterproof design, delivering stability and reliable performance in outdoor.

1.2 Key Features

- **Multiple Biometric Authentication Methods**

  Equipped with flexible under mount and pole mount authentication options, including facial recognition, palm verification, RFID, and QR code (dynamic/ static), the swing barrier delivers secure, touchless access control tailored to your operational needs.

- **Rugged All-Weather Durability**

  Achieved IPX4 water-resistant protection rating fits for all-weather conditions. The swing barrier delivers robust durability with a Mean Cycles Between Failures (MCBF) of up to 10

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million, and ensures minimal downtime with a Mean Time To Repair (MTTR) of less than 60 minutes.

- **High Performance Servo Motor**

  Designed for high-traffic environment, 0.3 to 0.6 second opening and closing time, enabling seamless passenger flow of up to 35 users per minute. Experience the perfect balance of speed and security, maintaining precise access control at every entry point.

- **Safety and Security**

  Barriers auto-unlock on power outage or fire alarm, switching to normally open for rapid egress. The swing barrier also supports manual emergency door release to ensure unobstructed evacuation. It features anti-tailgating and anti-pinch protection enhance user safety.

- **IR Sensors for Enhanced Detection**

  The swing barrier integrates 12 pairs of infrared sensors (up to 18 pairs, optional) for full-area pedestrian detection, enhancing anti-pinch and anti-tailgating safety. An internal clutch engages instantly to halt swing barrier operation, protecting users and preventing device damage.

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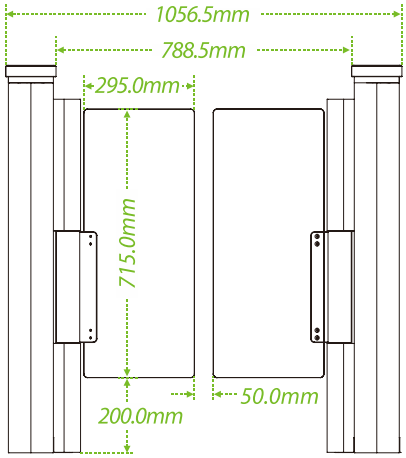
1.3 Specification

1.2.1 Appearance

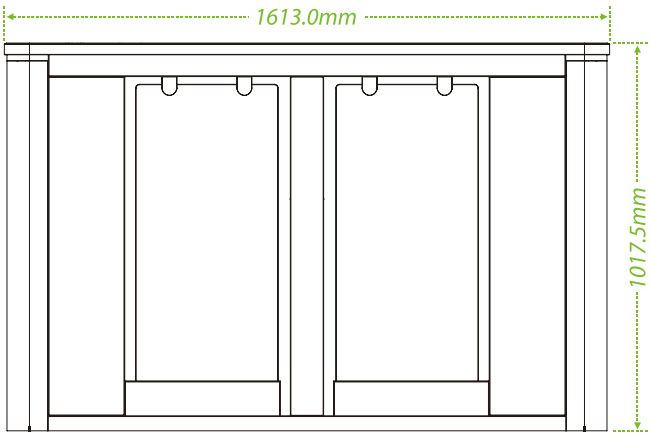
- **SBTL8000 Series**

Unit: mm

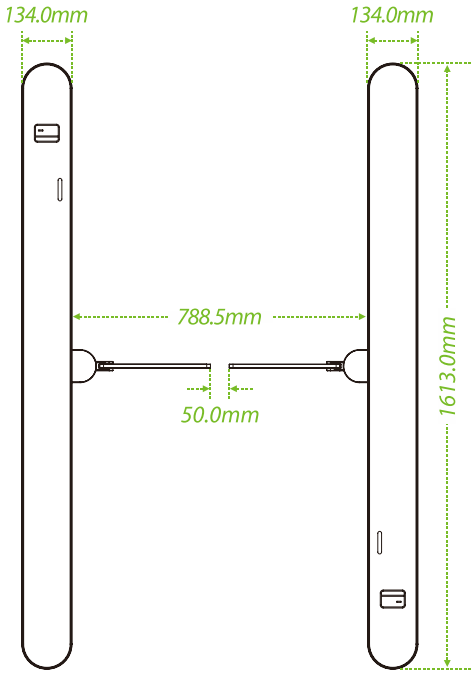
Front View



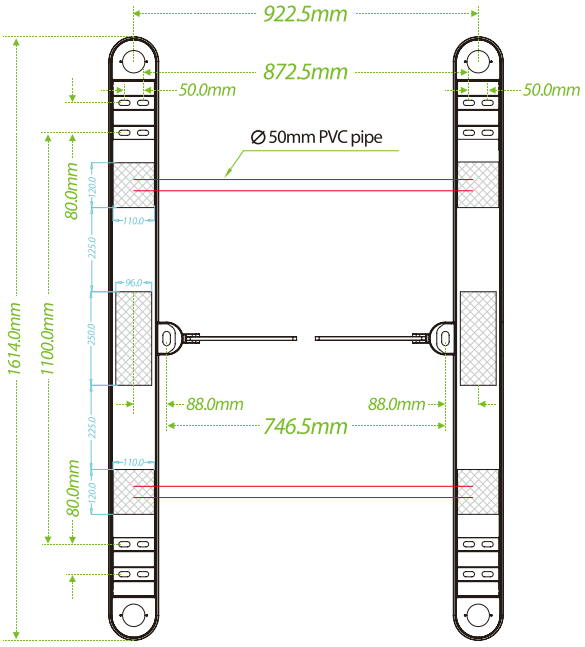
Side View



Top View



Bottom View



(**Note:** applies to IP65 rated models: SBTL8000WP and SBTL8200WP. Dimensions at: 1613*134*1031.5mm).

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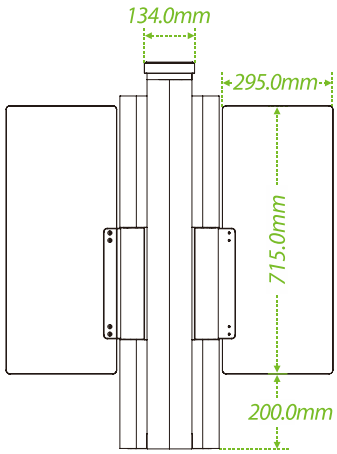
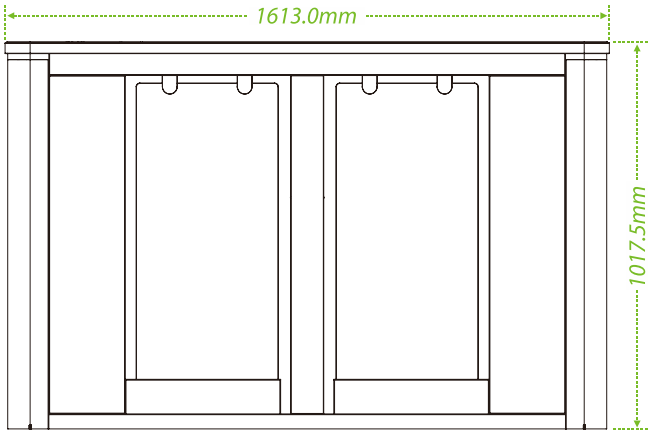
- **SBTL8200 Series**

Unit: mm

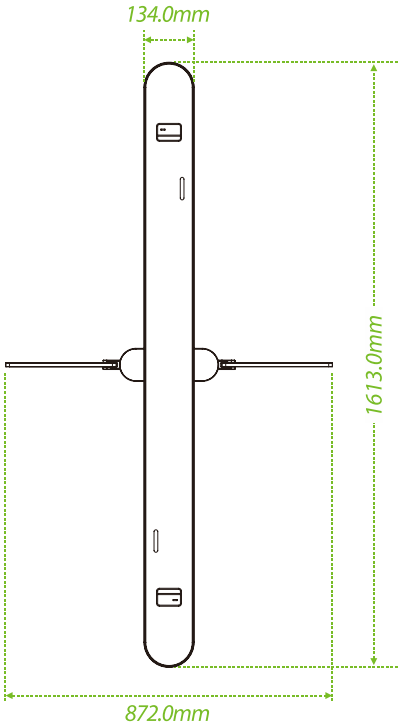
Front View



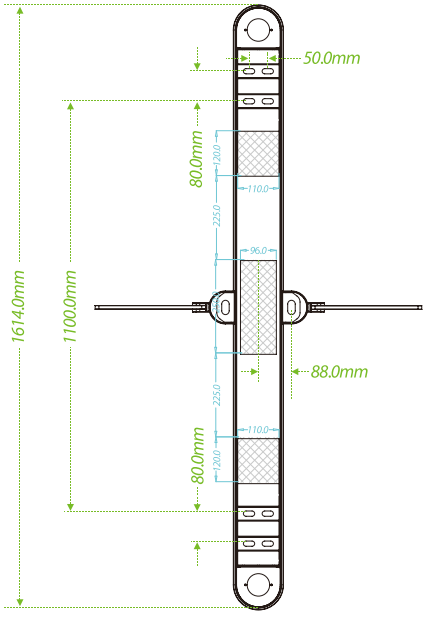
Side View



Top View



Bottom View



(**Note:** applies to IP65 rated models: SBTL8000WP and SBTL8200WP. Dimensions at: 1613*134*1031.5mm).

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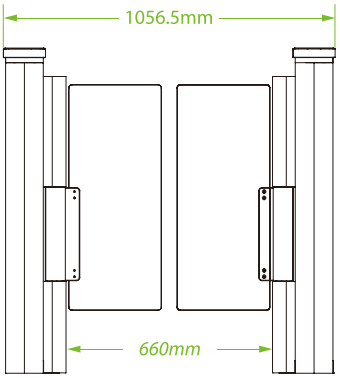
- **Door Leaf Specifications**

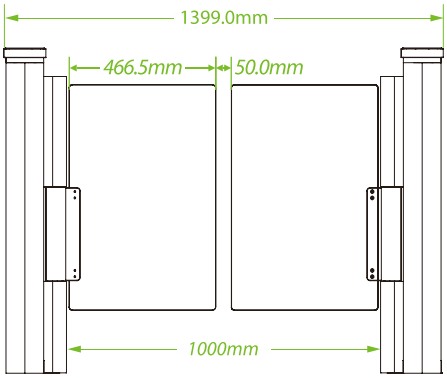
The units can be combined to form a single, dual or multi-lane system, allowing the user to select the appropriate swing arm size according to actual needs. It should be noted that SBTL/OTSG8200 series needs to be used in conjunction with SBTL/OTSG8000 series. Lane width options determine door leaf size. Select 660 mm (standard) or 1,000 mm (wide lane, optional).

Unit: mm

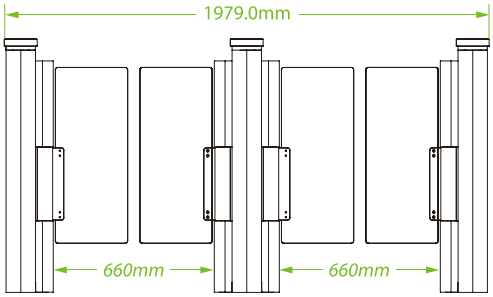
● Single-lane

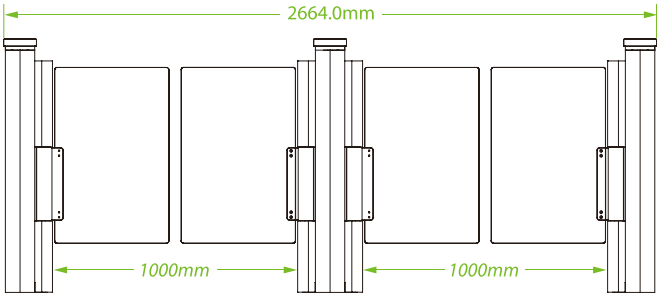


● Wide-lane (Optional)

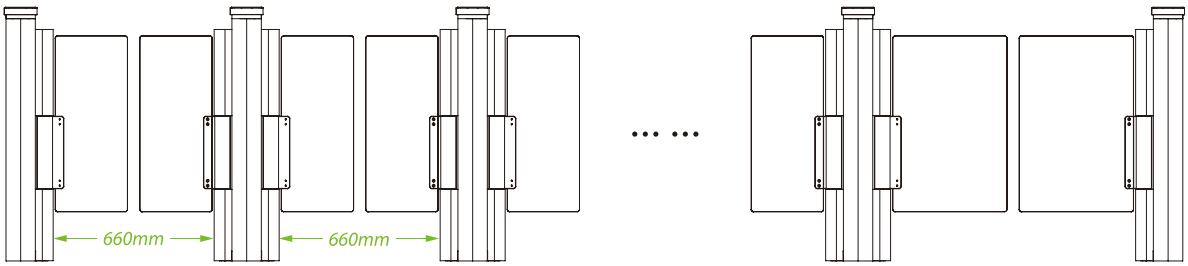


● Dual-lane





● Multi-lane



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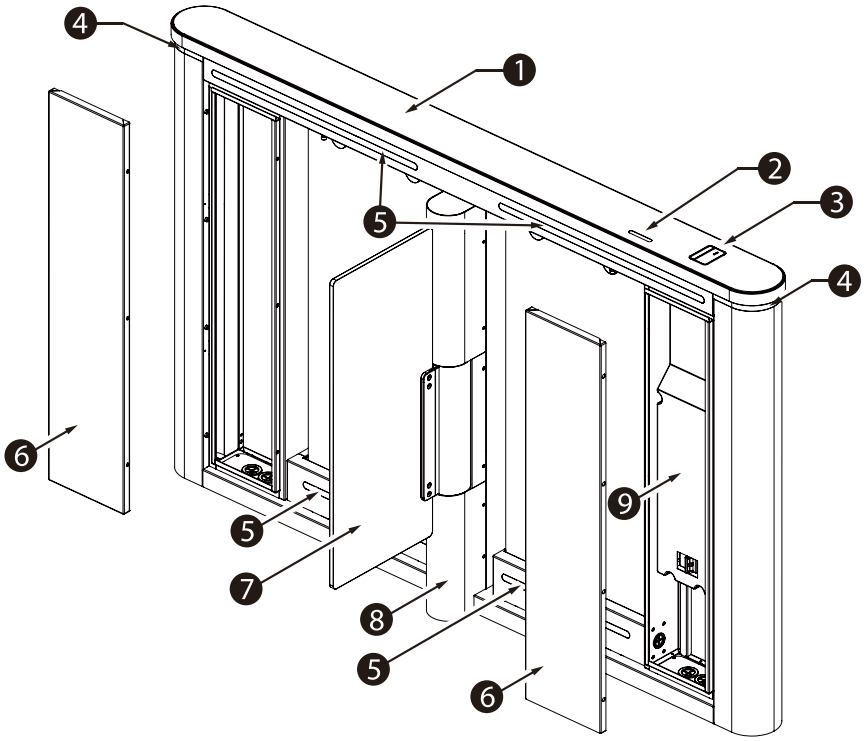
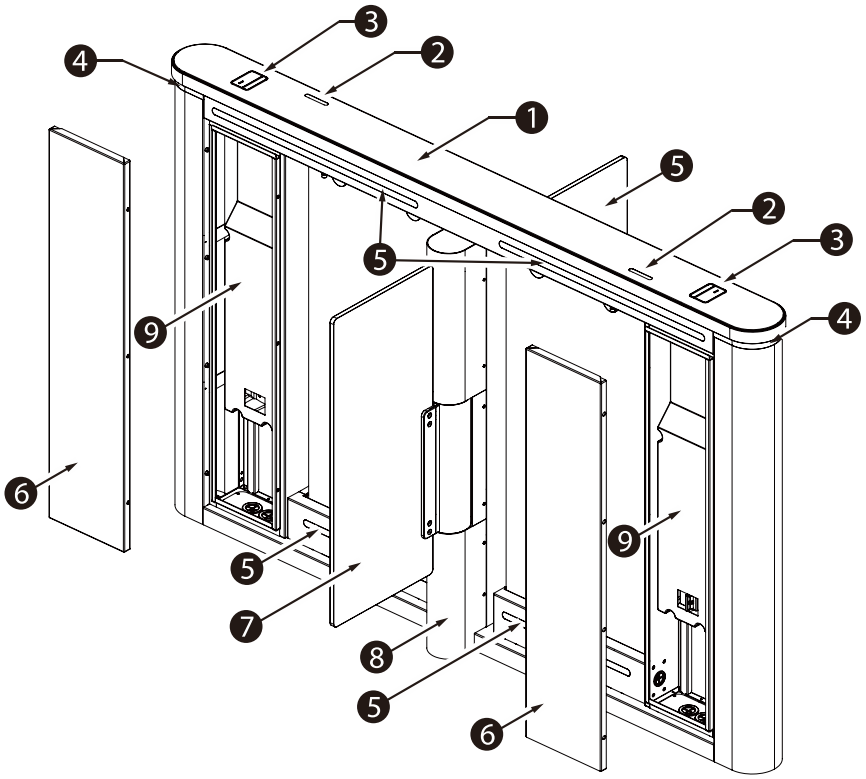
1.2.2 System Components

- **SBTL8000 Series:**



- **SBTL8200 Series:**



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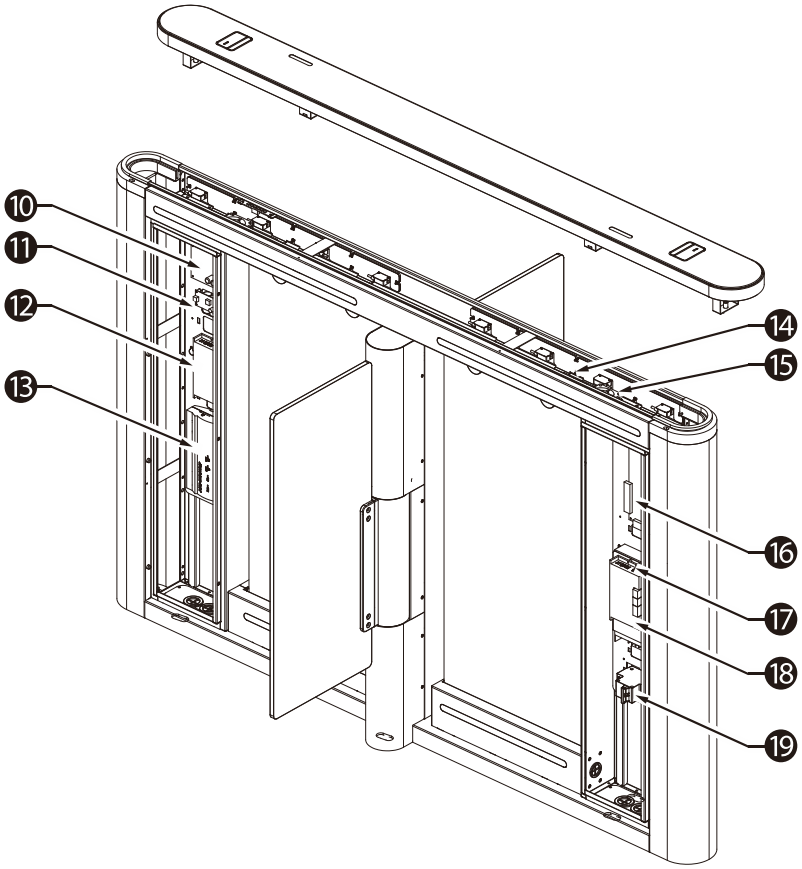

No.	Components	Descriptions
1	Cover Plate	Lid material: SUS304 Stainless Steel+Acrylic
2	Traffic Indicator	Indicates the current passage status of the gate.
3	Card Reading Area	RFID card module standard configuration.
4	Visual Indicator	Top LED indicator: Blue=Door closed /stand by Green=Door opening Red=Door closing/alarm
5	Infrared Sensor	With anti-pinch function. Includes transmitter and receiver ports. In the case of dual channel, standing in the entry position, the IR sensor on the left side cabinet is the transmitter. The IR sensor on the right side cabinet is the receiver. The IR sensor on the left side of the center cabinet is the the receiver and the IR sensor on the right side of the center cabinet is the IR transmitter.
6	Chassis Cover	For protecting the main cabinet or sub cabinet.
7	Door Leaf	Door Leaf Material: Clear Acrylic(optional: Tempered Glass)

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8	Core Component	Fully automatic type model with motor to control the movement running and stopping. The SBTL8000 is a single movement used to control single access. The SBTL8200 is a dual movement used to control bidirectional access.
9	Waterproof Cover for Electrical Controls	For electronic control waterproofing.
10	Sub Board	Sub Board, the system's control center
11	Fire Board	Fire Control Port
12	Drive	Motor drive
13	Access Controller	Verifies credential validity and, if approved, sends a door-open signal to the turnstile controller.
14	Speaker	To play alarms or alert voices.
15	Fan	Used for cooling.
16	Main Board	Main Board, the system's control center
17	Power Supply	110V / 220V ±10% AC @50Hz/ 60Hz
18	Circuit Breaker	It provides reliable protection by automatically disconnecting the circuit in the event of overload, short circuit, under voltage, or power loss.

1.2.3 Technical Specifications

- **Speed Gate Specifications**

Model	SBTL8000	SBTL8200
Audio Indicator	Internal buzzer	
Visual Indicator	Top LED indicator: Blue=Door closed /standby Green=Door open Red=Door close/alarm	
Display	N/A	
Lane Type	Single Lane	Dual Lane
Lane Width	660mm (Standard)/ 1000mm (Optional)	
Barrier Movement Type	Swing	
Barrier Material	Transparent Acrylic	
Barrier Size	715mm * 295mm (L*W)	

Motor	Servo motor	
Movement Speed	Average 0.3s to 0.6s per movement (Adjustable open/close timing)	
Movement Accuracy	N/A	
Clutch	Equipped	
Lid Material	Tempered glass	
Lid Options Authentication Methods	Undermount options: QR Code (Dynamic/ Static)/ RFID Post mount options: Facial Authentication	
Chassis Material	SUS304 stainless steel	
Chassis Colour	Metallic gray	
IR Sensors	12 pairs (Standard); 18 pairs (Optional)	
Door Leaf Material (H*W)	Acrylic 295*715mm	
Motherboard Function	System configuration, access mode configuration	
Motherboard Communication	Fire alarm port (Relay)*1, RS485 port*1	
Controller	Not equipped, C3 series controller/ InBio series controller (optional). 3rd-party controller subject to turnstile chassis space.	
Credential Options	Post mount RFID reader: (support model: Pro ID Series, KR Series) Post mount QR code reader: QR500	
Flow Rate	Facial Authentication: 30 passengers per minute QR Code(Dynamic/ Static): 30 passengers per minute RFID: 35 passengers per minute	
Accessibility	Adult, children and elderly (with care), Disability (with care)	
Power Supply	AC 100V–220V,50/60 Hz	
Power Rating	40VA (Standby); 120VA (Operation)	
Fire Signal	Input for voltage-free contact	
Noise Level	Less than 60dB	
MTTR	60 minutes	
MCBF	10 million	
Weight	220kg	130kg
Dimension (L*W*H)	1613*134*1017.5mm (standard ;IPX4 protection rating) 1613*134*1031.5mm (optional ; IP65 protection rating)	
Dimensions with Packaging(L*W*H)	1770*370*1125mm(2 boxes)	1770*370*1125mm(1 box)
Operating Temperature	-20 °C to 70 °C	
Operating Humidity	0% to 95% RH (non-condensing)	
Certifications	CE, FCC	

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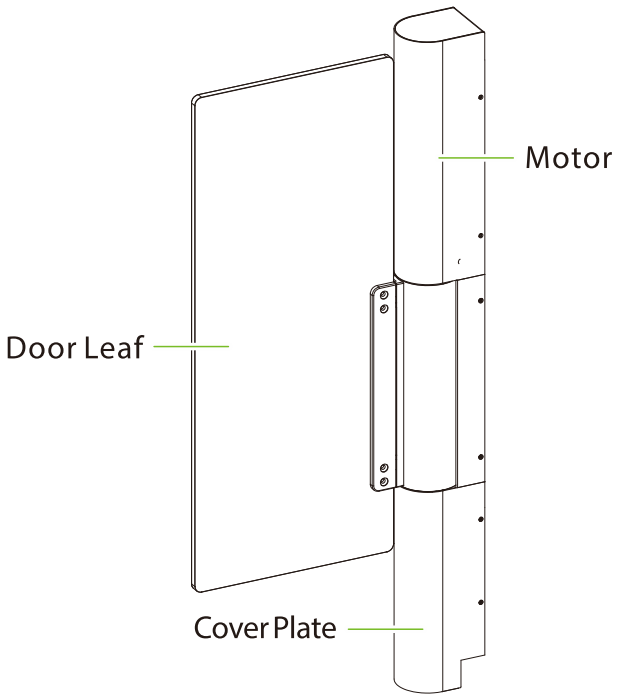
Ingress Protection Rating	IPX4 for water resistant(standard); IP65 for dustproof and waterproof(internal componenets customized upon customer request) Note: Please be aware that selecting the IP65 ingress protection rating will increase the overall device height by 14mm compared to the standard IPX4 configuration.
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-tailgating, anti-pinch
Product Delivery	Pre-assembled for easy installation
Application Environment	Indoor / outdoor
Site Preparation	Flat and level finished floor (optional base plate for unfinished floors)
Security Level	Middle
Emergency Mode	Swing barrier unlocks automatically
Packing Material	Wooden Box

1.4 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 and Door Leaf. As shown in the figure below.



1.5 Electronic Control System

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

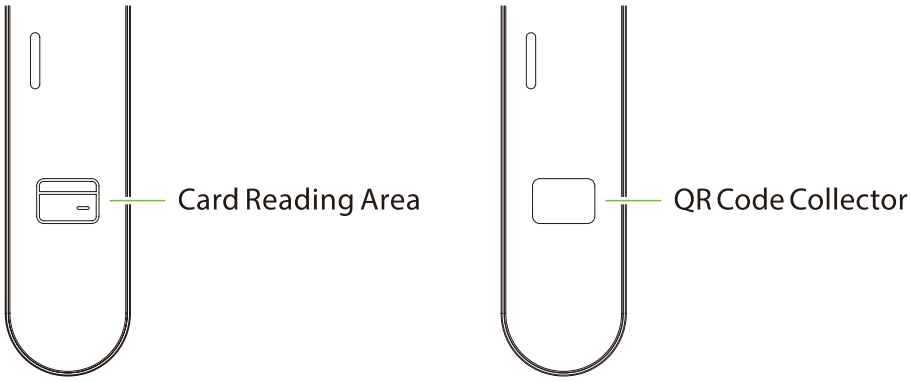
- **Card Reader:** The reader reads the data in the card and sends it to the Access Controller.
- **Infrared Sensor:** It detects the position of the pedestrian and plays the role of safety protection.
  Note: If the speed gate is single-lane, standing at the entrance position, the sensor on the left secondary unit is the transmitter and the sensor on the right primary unit is the receiver.
- **Turnstile Control Board:** The Turnstile control board is the system's control center that receives signals from the reader. The IR performs logical calculation and processing of these signals and then sends executive commands to the Traffic Indicator, Electric 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, anti-tailgate and other violations.

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:

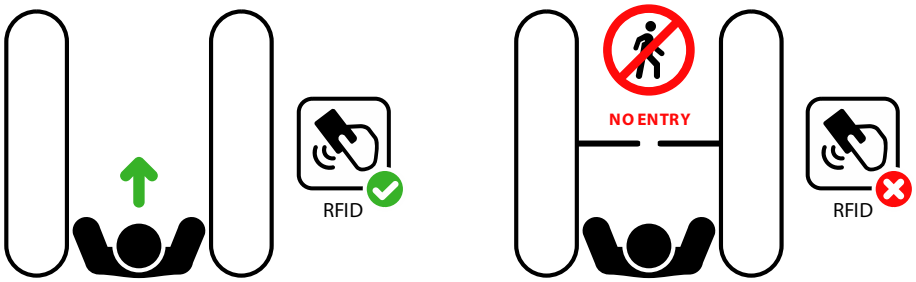
RFID only,RFID & QR Code.



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.

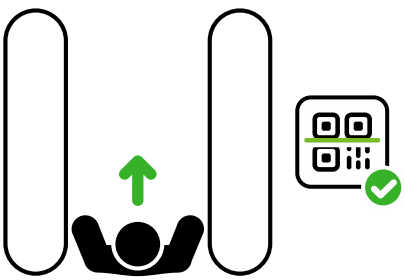
When a user presses his / her card on the card reading area, the device enters card authentication mode.

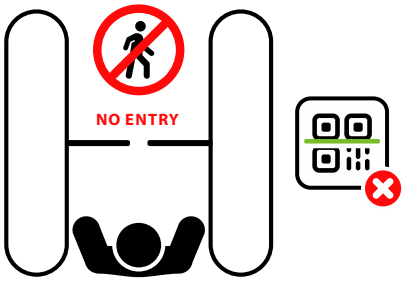


2.2 QR code Verification★

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.





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3 Installation

3.1 Installation Tools

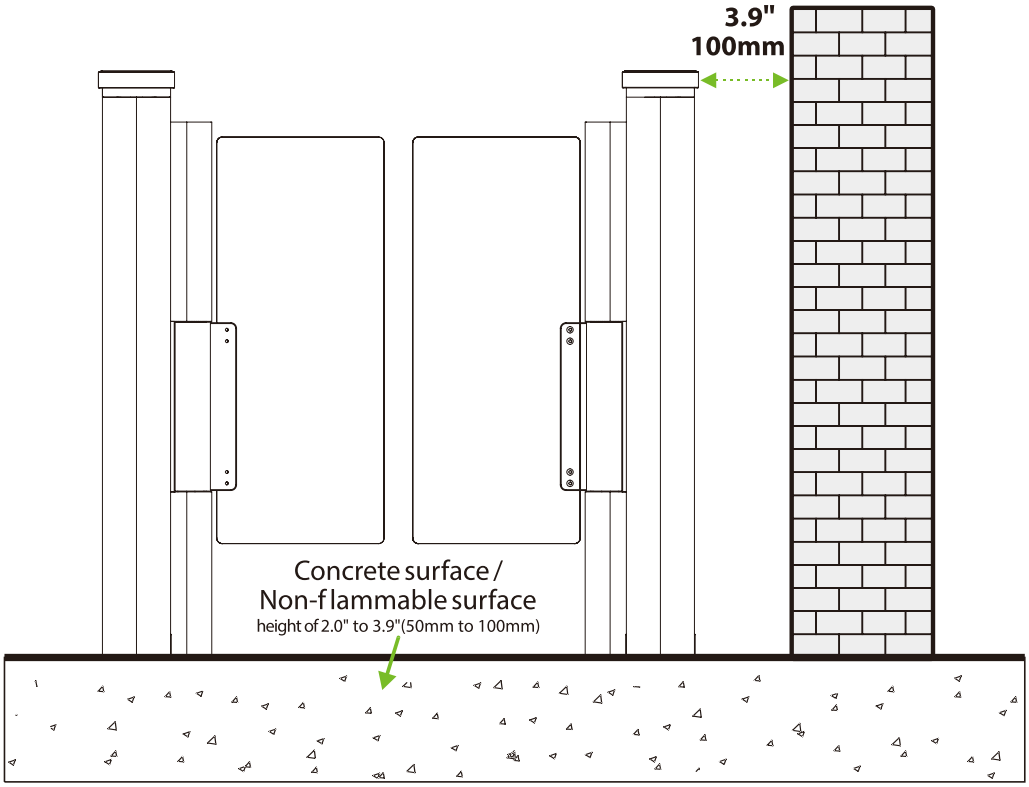
- Tapeline
- Marker Pen
- Pencil
- Percussion Drill
- Screwdriver
- Wrench
- Hex Wrench
- Cutting Machine

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

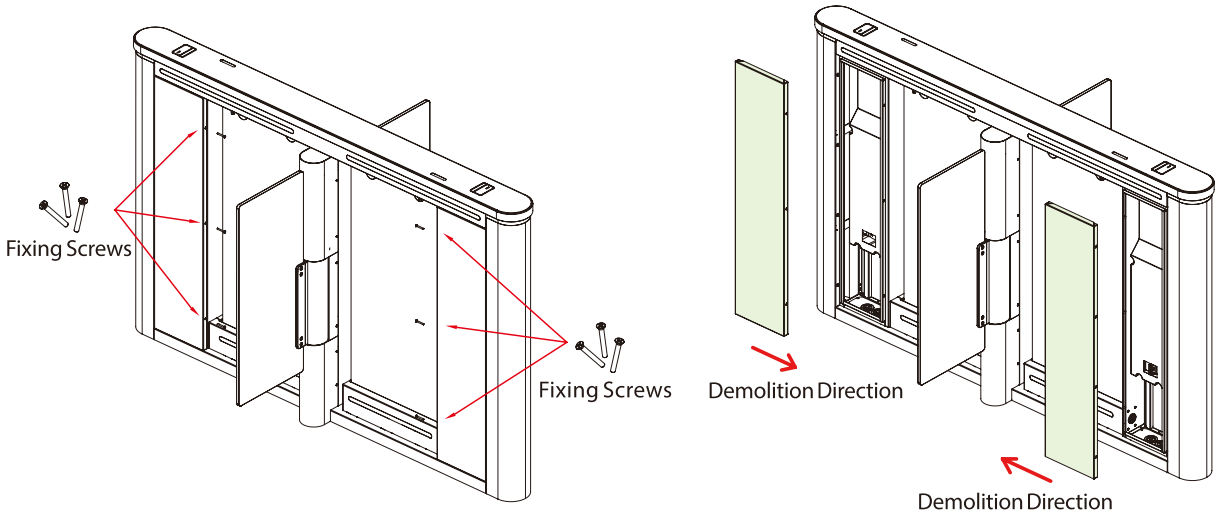
1. Before installation begins, prepare installation tools, check the device and the accessories, and clear the installation base.
2. Make sure that the appliance is mounted on a concrete surface or other non-flammable surfaces.
3. The installation position of the turnstile depends on its size. A distance 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:



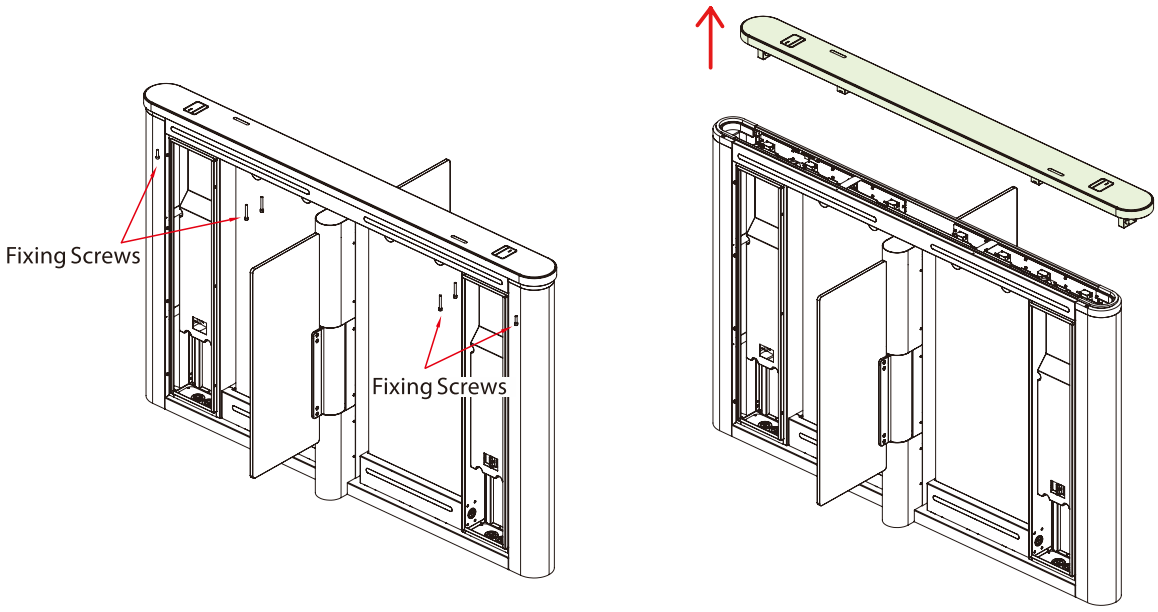
3.4 Installation Cabinet

Step 1 Remove the Chassis Cover and Cover Plate

1. Use a screwdriver to loosen the six fixing screws at the indicated locations, then remove the chassis cover in the direction shown.

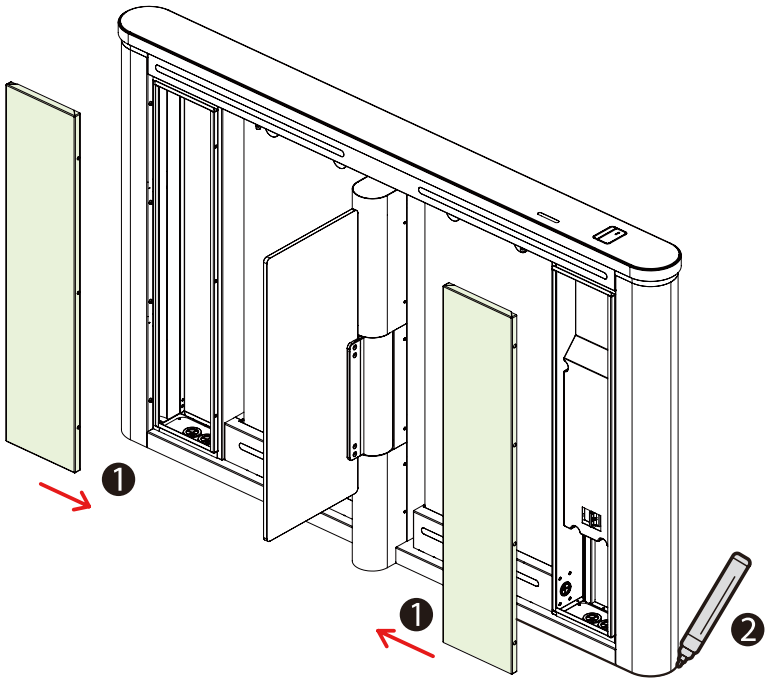


2. Using a Phillips screwdriver, remove the three fixing screws at the locations shown below, then take off the cover plate.



Step 2 Marker position

1. Draw the location of the cabinet with a marker and mark each location of the mounting holes. There will be a total of eight mounting holes and two wire holes per cabinet.
2. Remove the cabinets when finished.



Step 3 Determine the mounting location

1. Use a tool to open the chassis cover and remove it.
2. Complete the **power-on self test** before installation.

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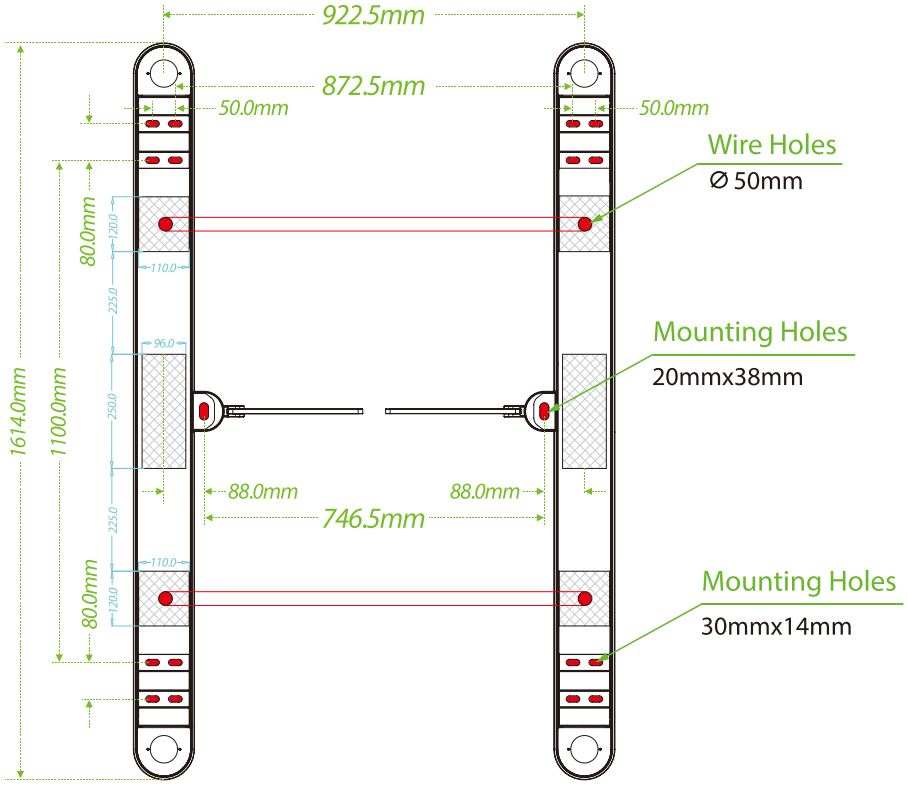
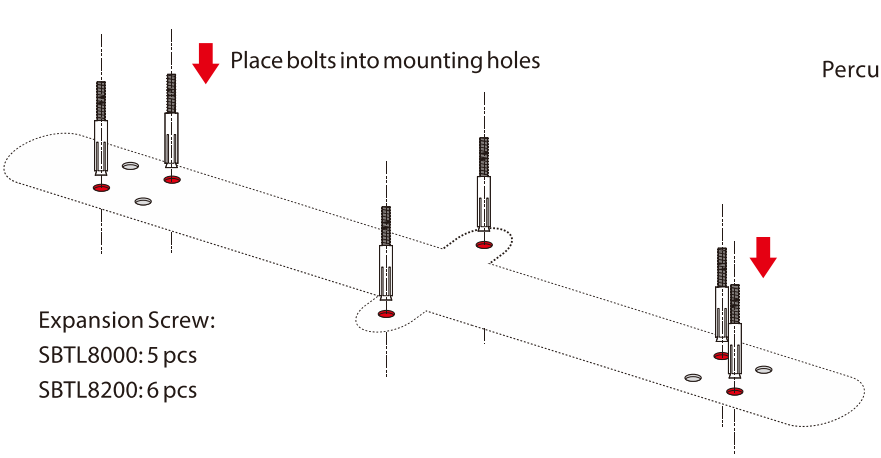
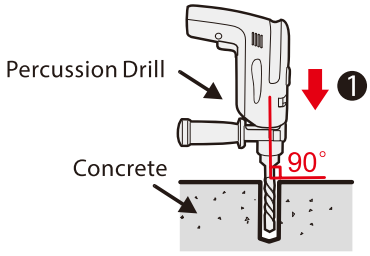
3. Then place the cabinet according to the mounting distances shown in the diagram below. Take care to measure the distance between the bottom inside walls of the cabinets on the entrance side and exit side of the channel and make sure that the measurements are consistent.

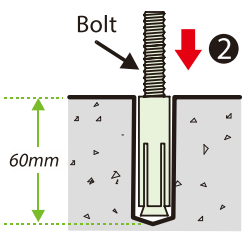


Step 4 Drill holes and place bolts

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. Make sure the bolts are placed in place. Use a hammer to tap the bolts into place, if needed.







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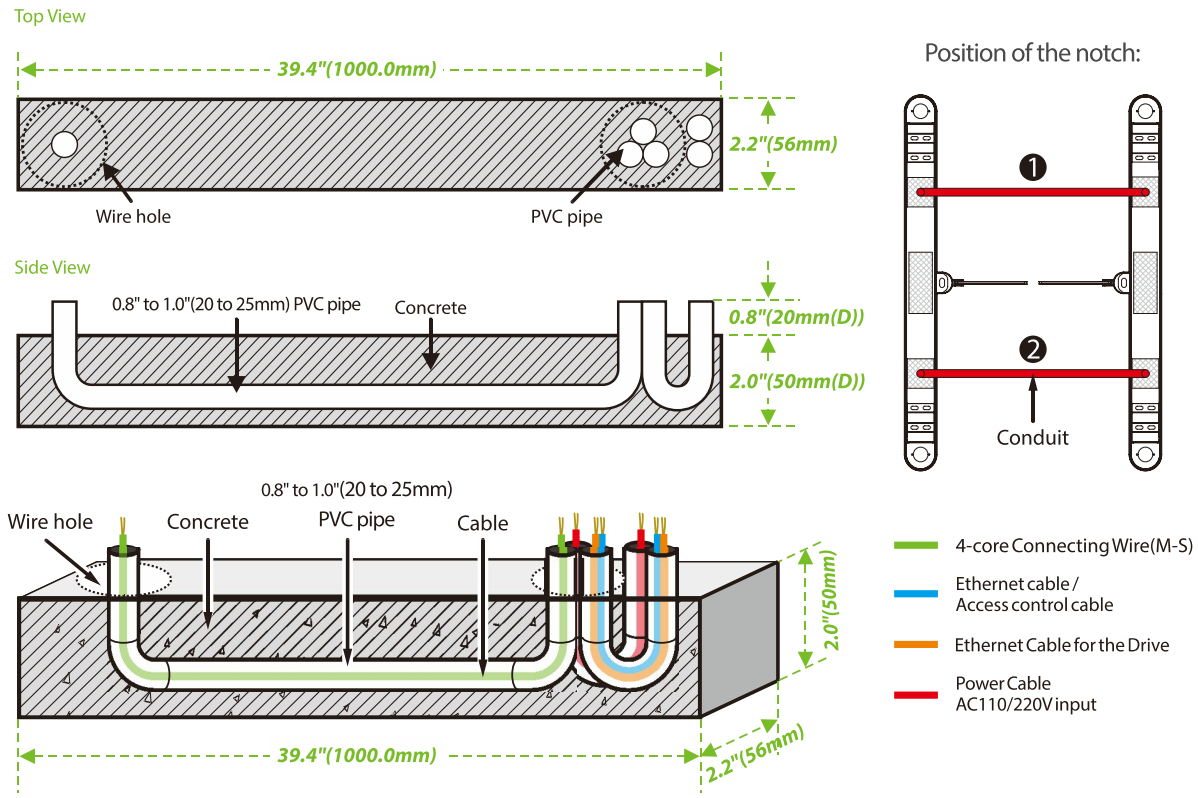
Step 5 Wireway laying

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.



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:

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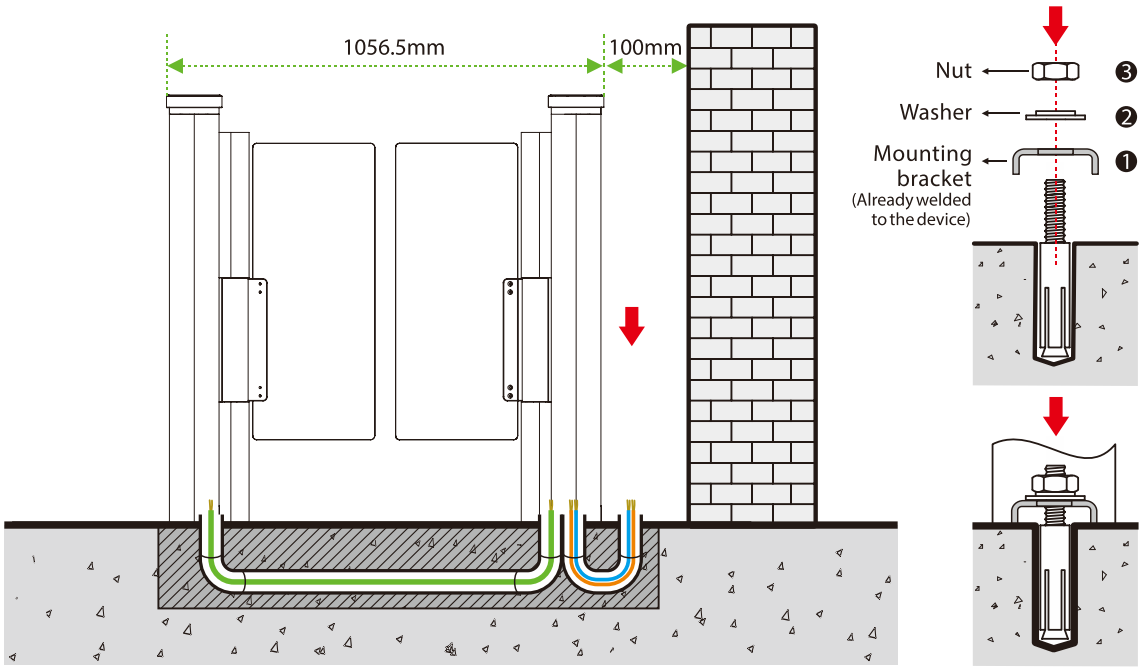
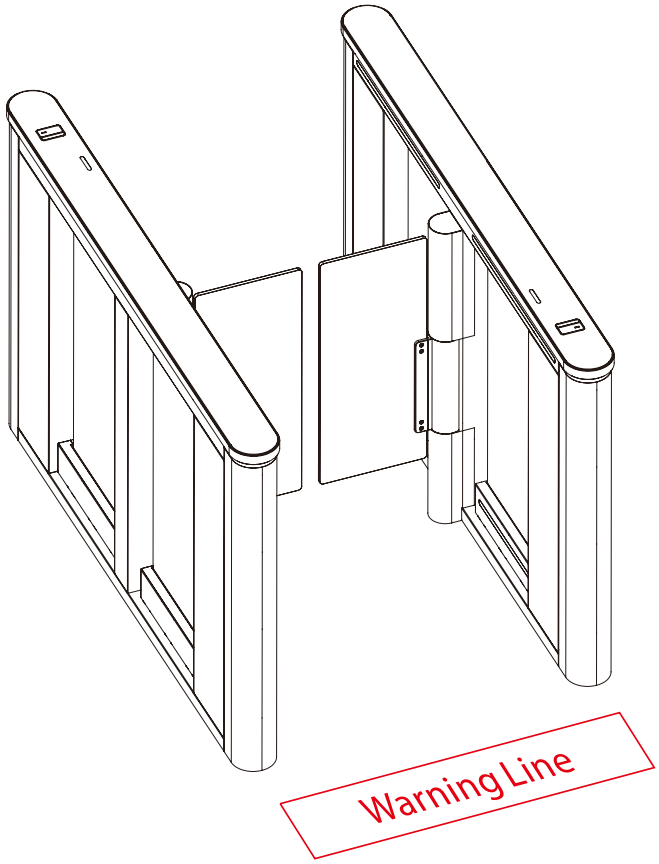


Step 7 Marking the warning line

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 verification process and passes through the turnstile.



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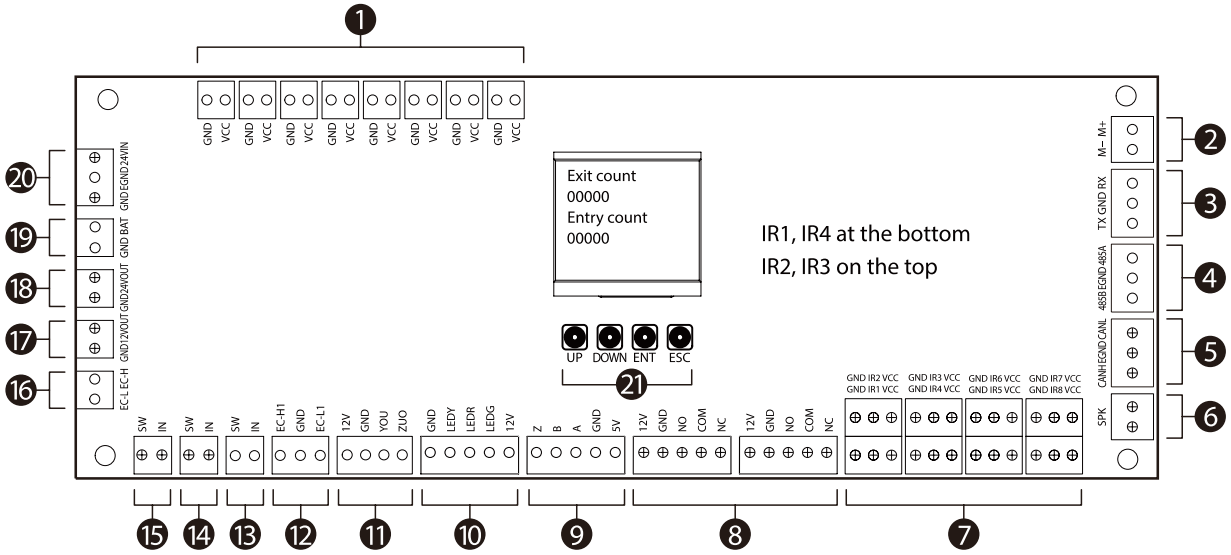
4 Terminal Description

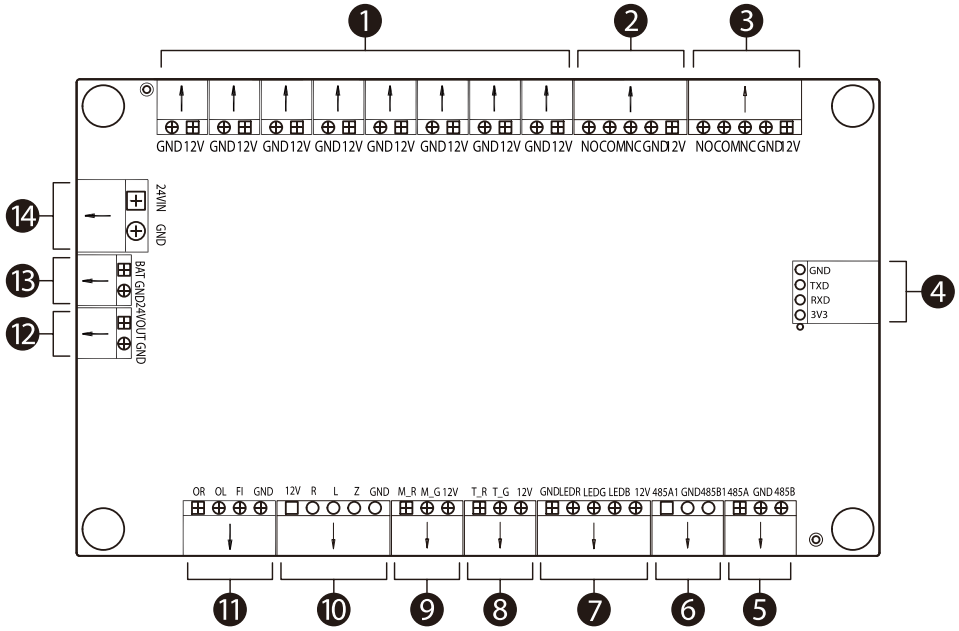
4.1 Main Board



NO.	Terminal	Descriptions
1	GND, VCC *8	12V infrared power supply of swing barrier
2	M-, M+	Motor of swing barrier
3	TX, GND, RX	RS232 communication
4	485A, EGND, 485B	RS485 communication
5	CANH, EGND, CANL	CAN communication
6	SPK	Speaker
7	GND, IR, VCC *8	Infrared sensor receiving port
8	12V, GND, NO, COM, NC *2	Connection wire
9	Z, B, A, GND, 5V	Encoder for swing barrier
10	GND, LEDY, LEDR, LEDG, 12V	Passing light of swing barrier
11	12V, GND, YOU, ZUO	Proximity switches for flap barrier
12	EC-H1, GND, EC-L1	Arm drop of tripod turnstile
13	SW, IN	Fire Control Port
14	SW, IN	Right Open
15	SW, IN	Left Open
16	EC-L, EC-H	Clutch of the swing barrier
17	GND, 12VOUT	12V power supply output
18	GND, 24VOUT	24 V power supply for the main board of the swing barrier

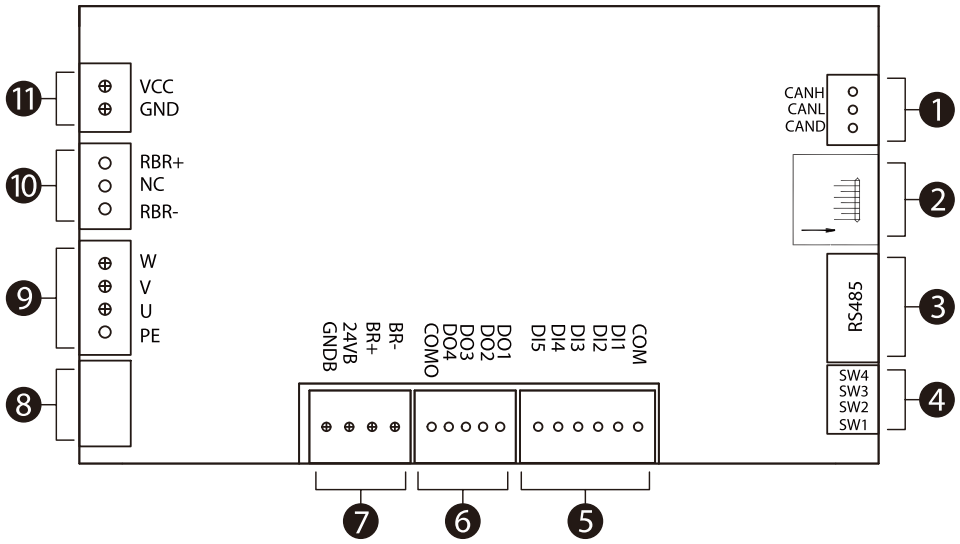
19	GND, BAT	Fire power supply for swing barrier
20	GND, EGND, 24VIN	24V power supply input
21	UP, DOWN, ENT, ESC	Control buttons for setting menu parameters.

4.2 Sub Board



NO.	Terminal	Descriptions
1	GND, 12V	12V power supply output
2	NO, COM, NC, GND, 12V	Left-counting
3	NO, COM, NC, GND, 12V	Right-counting
4	GND, TXD, RXD, 3V3	Bluetooth module
5	485A, GND, 485B	Master-Sub RS485 Communication Terminal
6	485A1, GND, 485B1	Reserved
7	GND, LEDR, LEDG, LEDB, 12V	Traffic Indicator
8	T_R, T_G, 12V	Left Mode Light
9	M_R, M_G, 12V	Right Mode Light
10	12V, R, L, Z, GND	Reserved
11	OR, OL ,FI, GND	Left Open, Right Open, Fire Control Port
12	24VOUT, GND	24V power supply output
13	BAT, GND	Supercapacitor Input
14	24IN, GND	24V power supply input

4.3 Main/Sub Motor Driving Controller

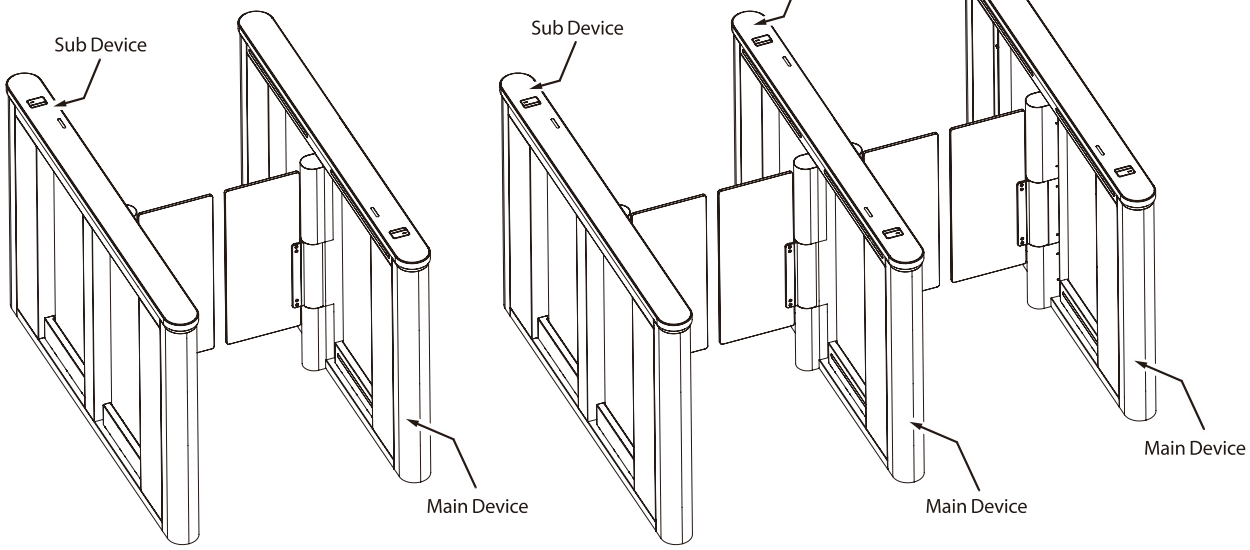


NO.	Terminal	Descriptions
1	CANH, CANL, CGND	CAN communication
2	RS485	RS485 communication between main and sub drives
3	RS485	RS485 communication
4	SW4, SW3, SW2, SW1	The main's SW2 needs to be dialed down, the sub does not need to dial the code
5	DI5, DI4, DI3, DI2, DI1, COM	Reserved
6	COMO, DO4, DO3, DO2, DO1	Reserved
7	GNDB, 24VB, BR+, BR-	24V power supply input of clutch, Clutch
8	/	Motor data cable input
9	W, V, U, PE	Motor three-phase input
10	RBR+, NC, RBR-	Reserved
11	VCC, GND	24V power supply input

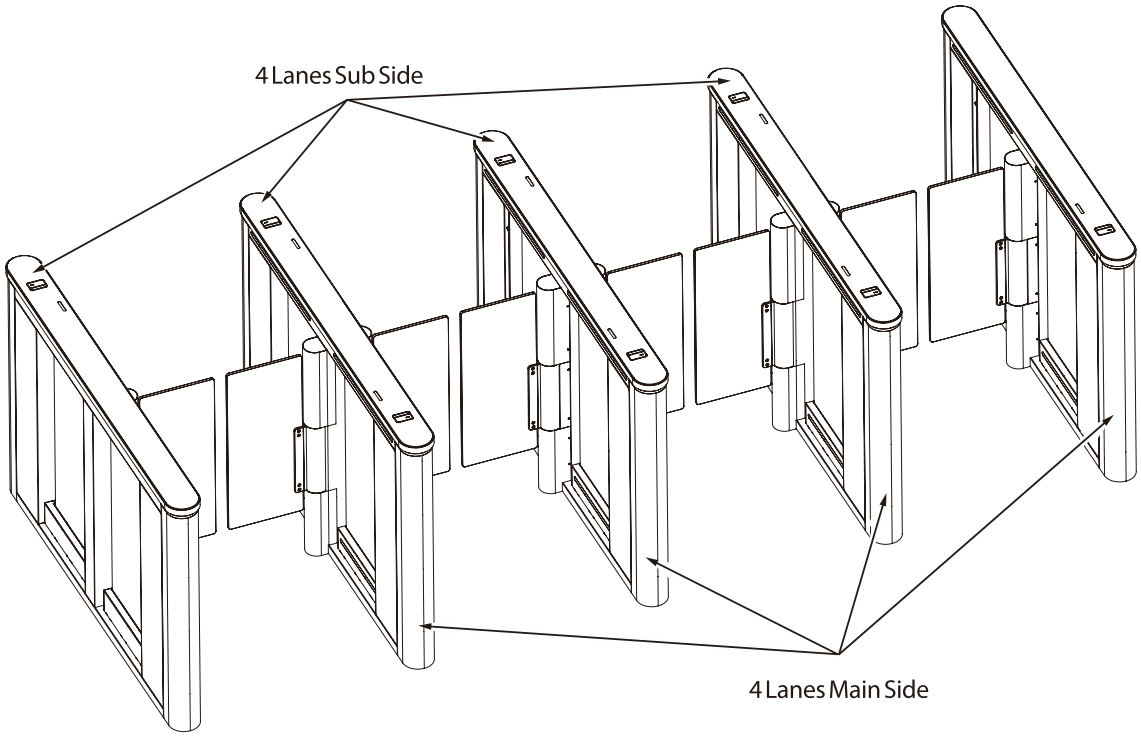
5 Wiring Instructions

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

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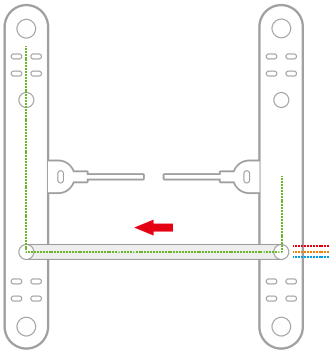
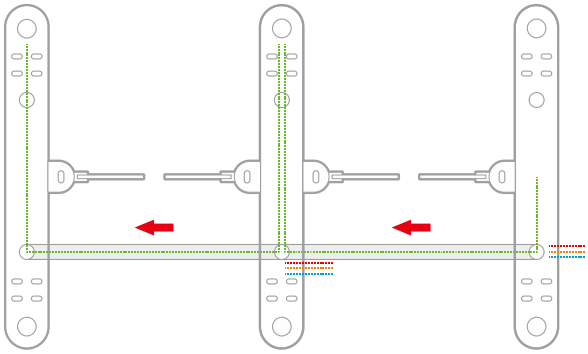
5.2 Wiring Methods

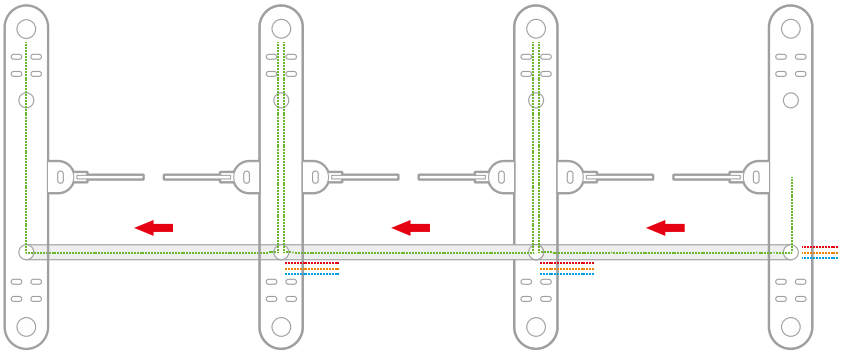
The wiring principle is to connect the master device to the slave device and communicate via the ECU-panel connection wire. Each master device is then powered individually. The following diagram shows how the different channels are wired.



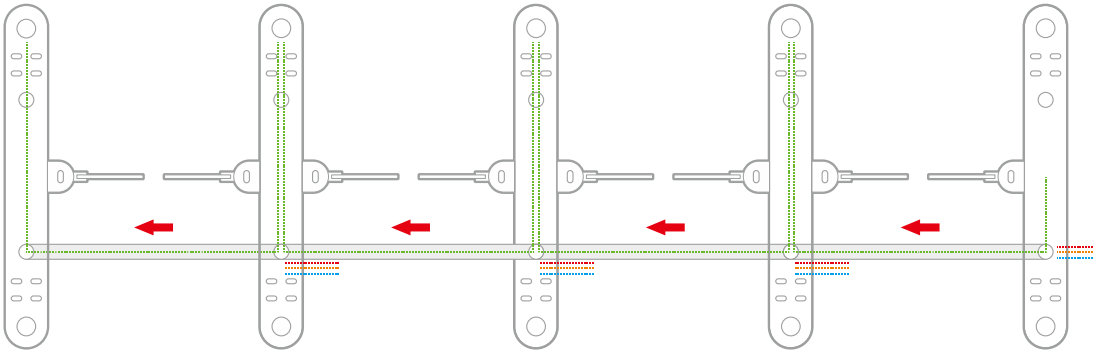
Single-lane



Dual-lane



Multi-lane



Multi-lane

Wiring Instructions

- 4-core Connecting Wire(M-S)
- Ethernet Cable /Access Control Cable
- Ethernet Cable for the Drive
- Power Cable AC110/220V input

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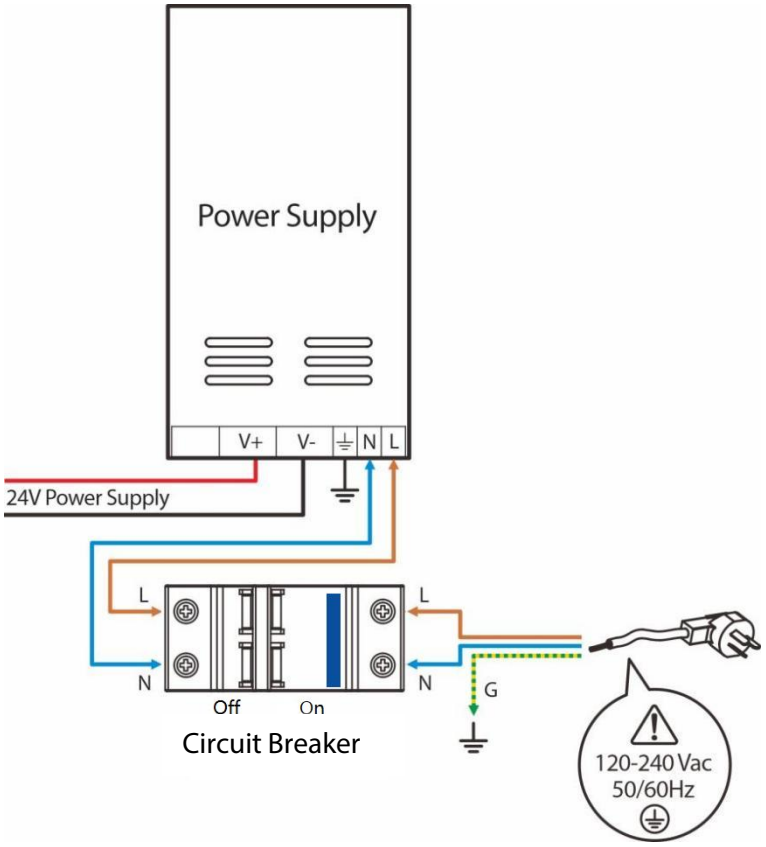
5.3 Power and Circuit Breaker wiring

120Vac and 240Vac primary power must be hard wired in place (Note: must be grounded). It is strongly recommended that a licensed electrician perform this procedure in accordance with applicable local codes.



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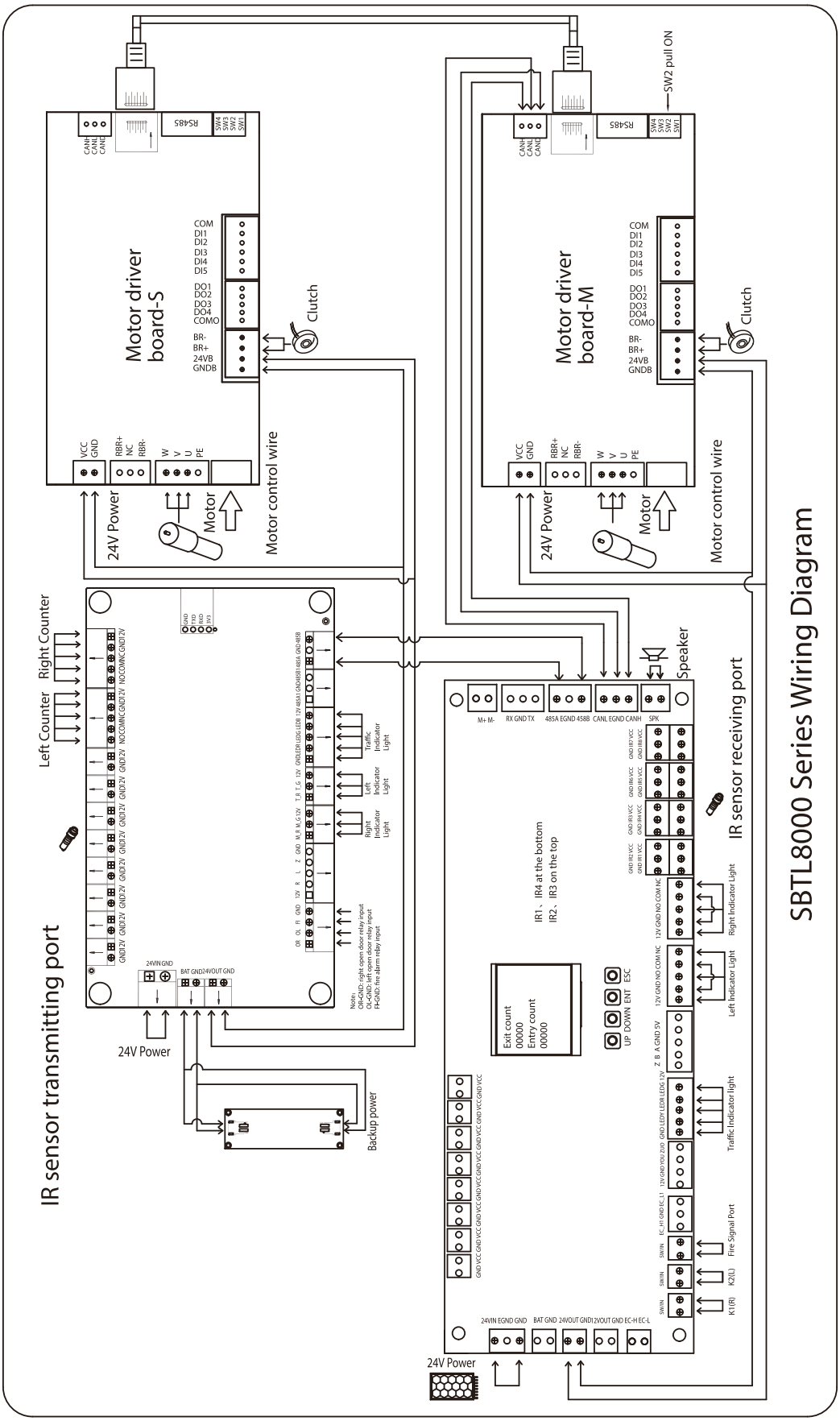
5.4 System Wiring Diagram



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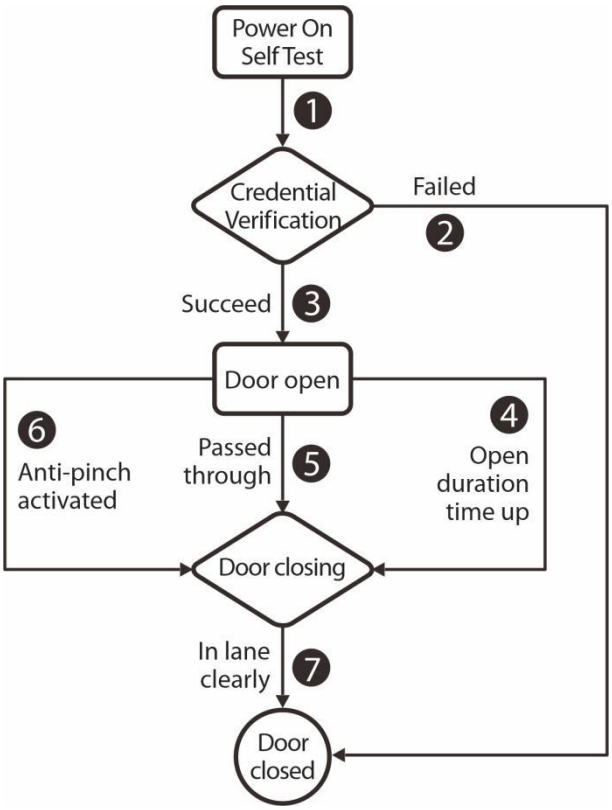
6 Operation Process



1. POST (Power On Self Test)

When powering up the unit, wait 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 5.3 Power and circuit breaker wiring for connecting the circuit breaker and power supply.)

2. Credential Verification

After the unit's power on self test is complete, you can test the door opening by pressing the **Up** button on the motherboard.

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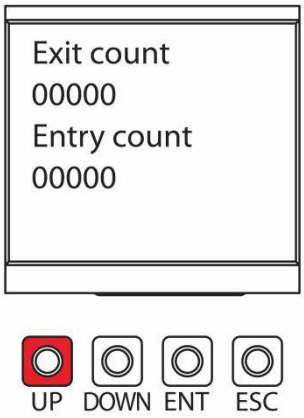


When the user presses the **Up** button on the main board, it is equivalent to recognizing a valid card. The LCD display will show success and a buzzer will give a positive audible indication to the pedestrian that it has been successfully validated. The card reader then sends a signal to the access 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.

1) Verification Success

When the verification is successful, the door is opened.

2) Validation Failure

When verification fails, the door remains closed.

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

3. Passed Through

After the passenger passes the channel according to the opening direction of the swing arm, the Infrared Sensor will keep detecting the movement of the pedestrian throughout the passage and continue to deliver signals to the Turnstile Control Board until the pedestrian passes through the passage.

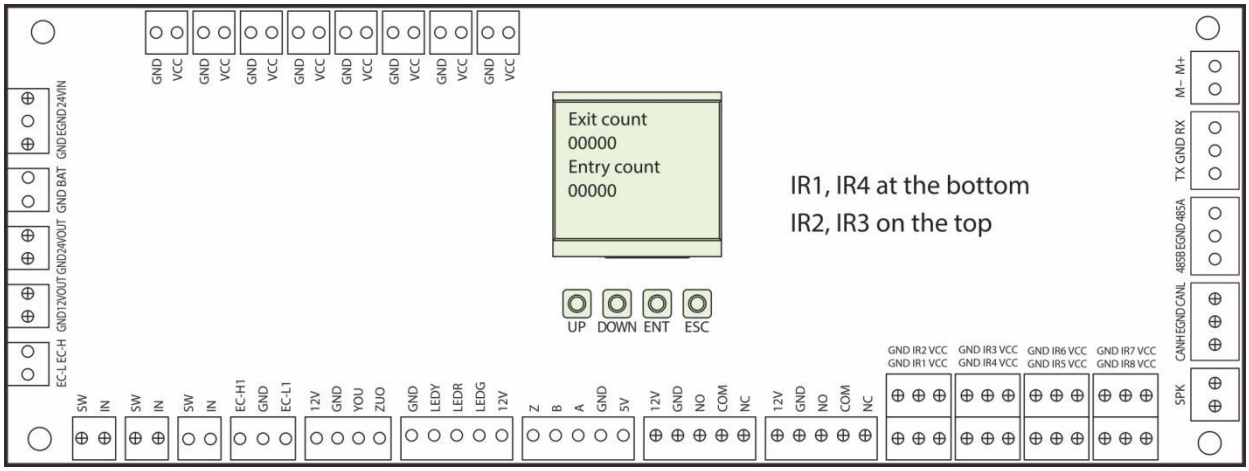
If the pedestrian enters the passage but forgets to verify identification, or if the card by the pedestrian is invalid, the system will prompt an audible alarm to warn the pedestrian to stop passing. The alarm signal will not be can celled until the passenger retreats from the passage. The pedestrian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

7 Machine Operation

7.1 Operation Buttons Description

To meet different needs, this system provides multiple working modes for users, including the **Normal Working Mode**, **Normally Open Mode**, **Normally Closed Mode**, and **Testing Mode**.

After supplying power to the device, the LCD screen on the control board will display a default state. There are 4 operation buttons below the LCD screen, "UP", "DOWN", "ENT" and "ESC". You can set the parameters through the operation buttons on the control board, as shown in the figure below.



Operation Buttons Description:

- **UP:** To move upwards or increase the value.
- **DOWN:** To move downwards or decrease the value.
- **ENT:** To enter a menu setting item or confirm the current modified value.
- **ESC:** To return to the previous menu or cancel the current operation.

- **Instructions for menu operation**

Press the **ENT** button to enter the password input interface and enter the default password (the default password is: **UP, UP, DOWN, DOWN, DOWN, DOWN, DOWN**). You can press **ESC** button to clear the last entered password. After entering the menu, press **UP** or **DOWN** to select the menu item, then press **ENT** to enter the interface and adjust the function or value.

7.2 Menu Parameter Settings

Tips: To edit any parameter, press **ENT** first.

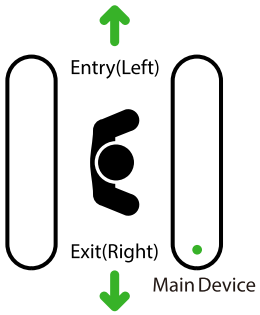
1. Correct Barrier Position

Press **ENT** to modify, press **UP/DOWN** to select the correction type, and press **ESC** to exit.

- Zero position (Default)
- Left-open position
- Right-open position

2. Opening Mode Setting

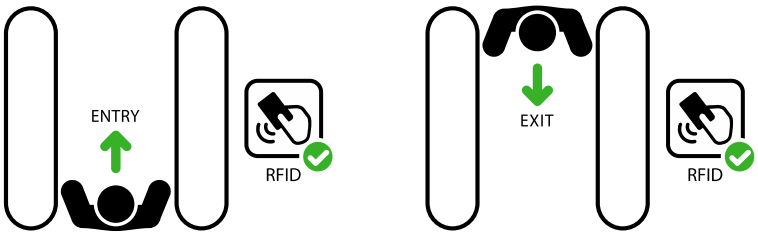
NOTE: Direction reference: Stand in the lane facing the main cabinet as shown below. Your left is Entry (→ left side), and your right is Exit (→ right side).



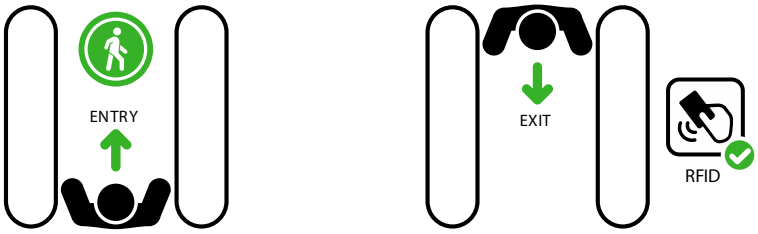
Mode codes:

- **C:** Controlled (verification required)
- **F:** Free (no verification)
- **N:** No passage (prohibited)
- **O:** Normally open

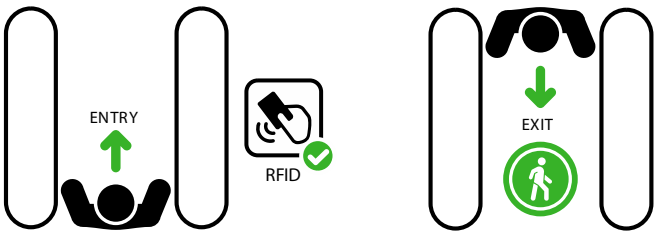
1) ->**C, C**<- (Two-way controlled, both need verification) (Default)



2) ->**F, C**<- (In free, Out need verification)



3) ->**C, F**<- (In need verification, Out free)



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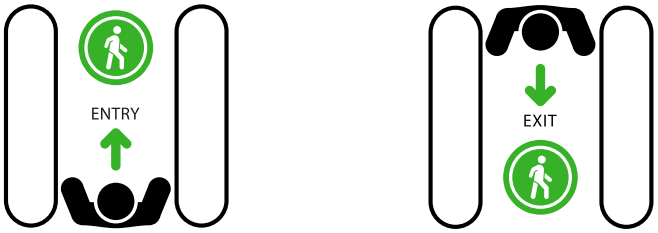
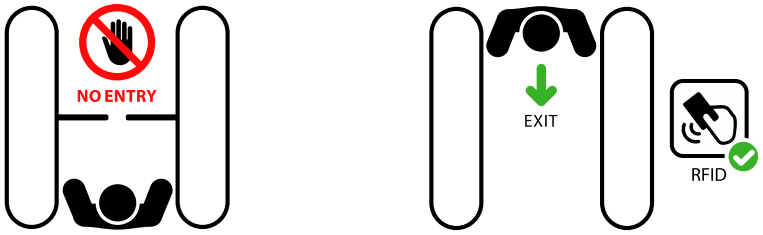
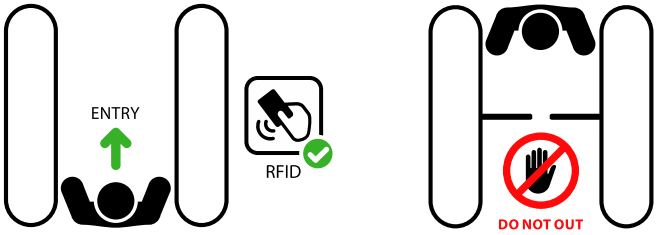
4) ->**F, F**<- (Two-way free)



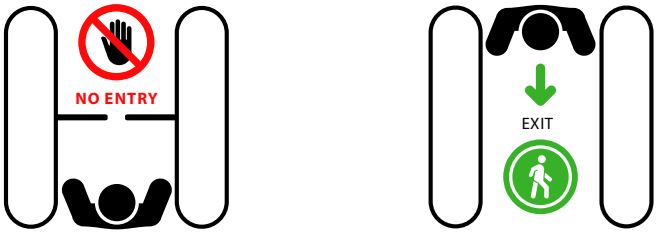
5) ->**N, C**<- (In prohibited, Out need verification)



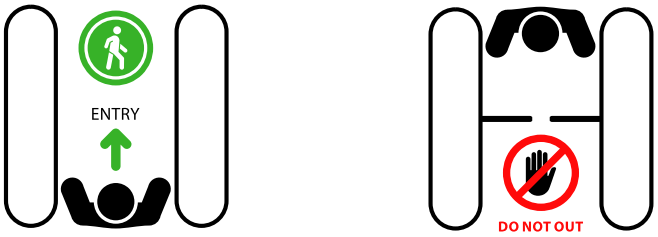
6) ->**C, N**<- (In need verification, Out prohibited)



7) ->**N, F**<- (In prohibited, Out free)



8) ->**F, N**<- (In free, Out prohibited)



9) ->**N, N**<- (Two-way prohibited)

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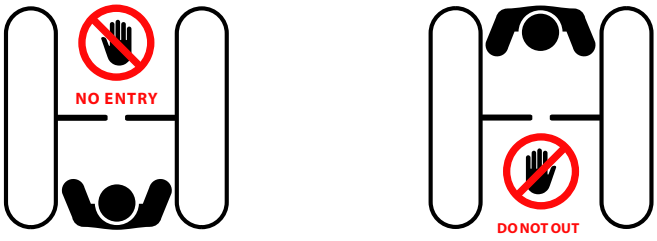
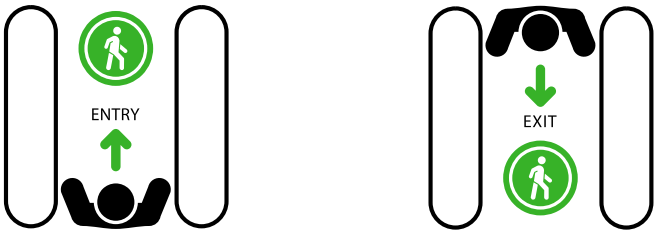
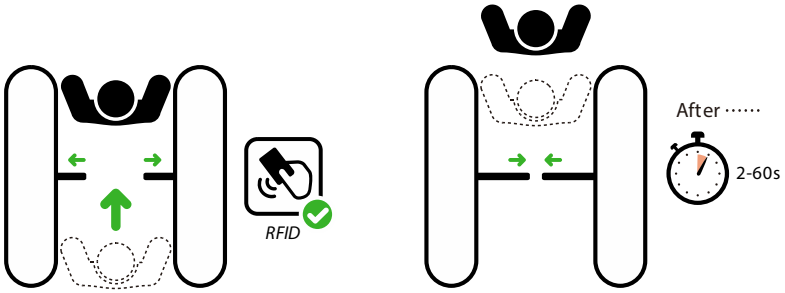


10) ->**O, O**<- (Normal Open)



3. 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.

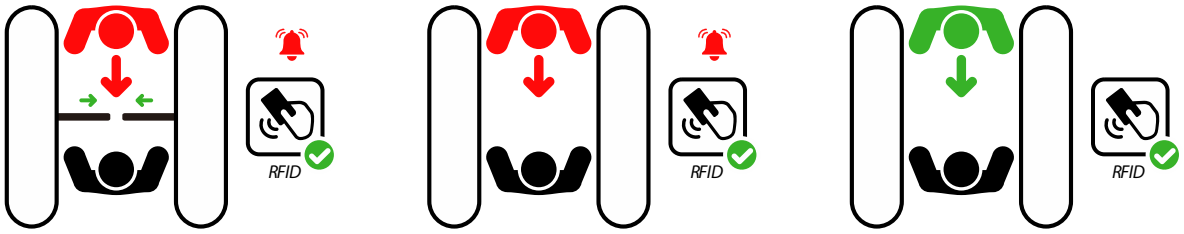


4. False Direction Entry

Triggers when a person moves in the opposite direction to the current permission.

Mode:

- Close the door and voice alarm
- Only voice alarm (Default)
- Close detection



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5. Trailing Mode

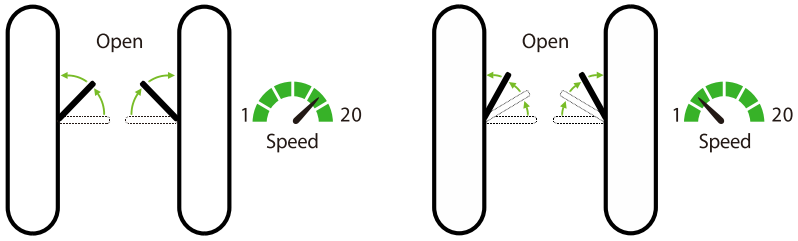
Triggers when a second person attempts to follow closely without verification.

Mode:

- Close detection
- Only voice alarm (Default)
- Close barrier with protection level: High
- Close barrier with protection level: Medium
- Close barrier with protection level: Low

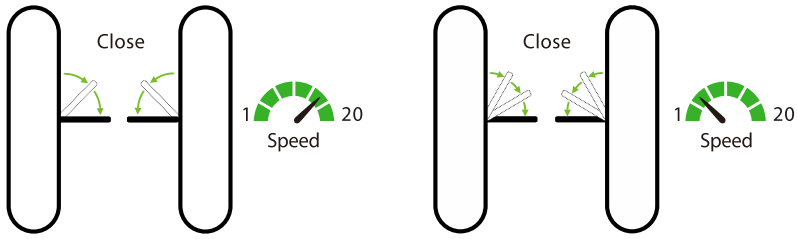
6. Opening Speed

To adjust the gate opening speed. The smaller the value, the faster the gate opening speed. The Gate Opening Speed can be configured between **1** and **20**, with a default value of **3**.



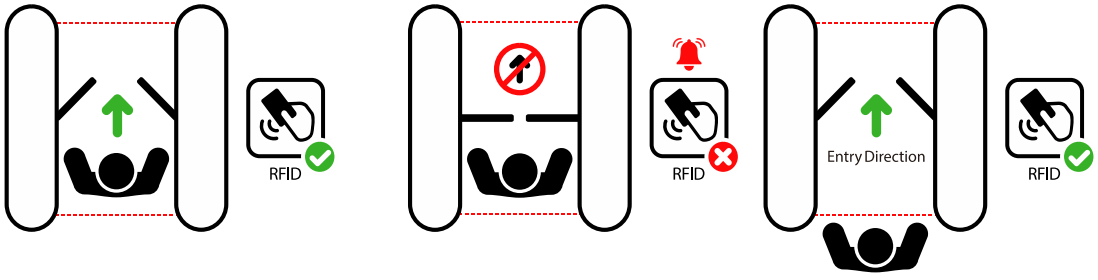
7. Closing Speed

To adjust the gate closing speed.The smaller the value, the faster the gate closing. The Gate Closing Speed can be configured between **1** and **20**, with a default value of **3**.



8. Swiping Limitations

- Allowed swiping card in the lane (Default)
- Forbidden swiping card in the lane



Swiping card in the channel

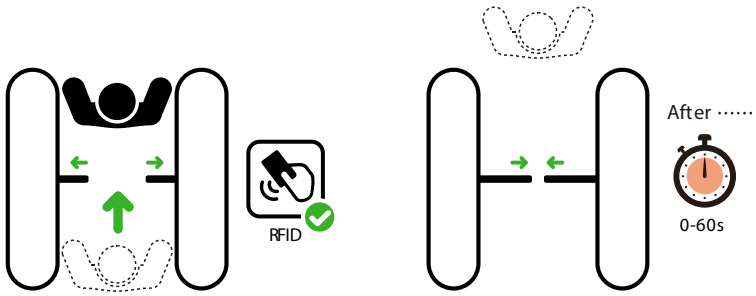
Swiping card outside the channel

9. Reset Counter

- Reset Exit Counter
- Reset Entry Counter
- Reset All (Default)

10. Delay closing gate time

Set the delay time of gate closing after passing. Sets the time the barrier waits to close after a pedestrian has successfully passed through the lane. Range: **0** to **60** seconds. Default: **0** seconds (Immediate closing for high throughput).



11. Unlock Brake Method

- Delay to unlock (Default)
- Swiping card to unlock

12. Brake Starting Angle

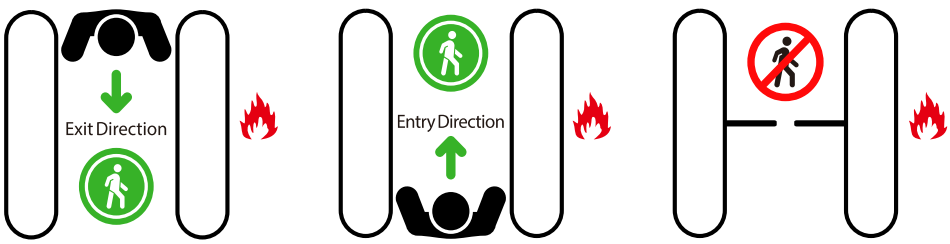
The valid value for brake activation angle can be set between **1** to **10** and the default value is **3**.

13. Fire Signal Setting

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

- Right open
- Left open (Default)
- Close

Note: Unless necessary, DO NOT close the fire alarm signal. If the fire alarm signal is closed, the gate will not open automatically in the inbound/outbound direction and will require identity verification.



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14. Volume Setting

Adjust the volume of the device, the valid value can be set between **1** to **25** and the default value is **15**. The larger the value, the louder the volume.

- Close

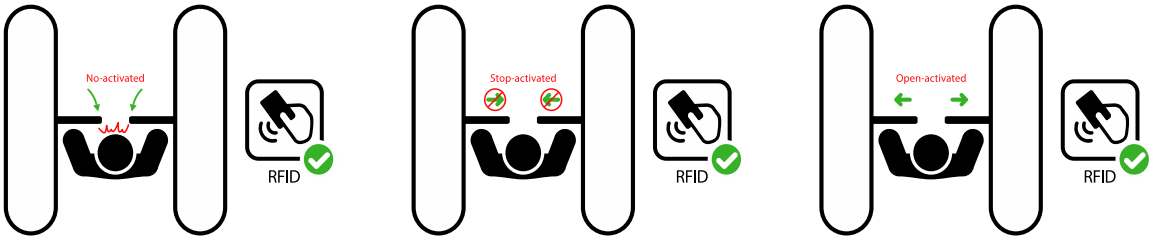
15. Exchange Opening Voice Prompts

Switches the entry/exit voice prompts.

- No
- Yes (Default)

16. IR Anti-pinch Setting

- No-activated
- Stop on trigger (Default)
- Open on trigger



17. Anti-pinch Area Selection

Selects which infrared zones provide anti-pinch protection.

- Entry and exit zones (Default)
- All infrared zones

18. Memory Opening

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 the pass requests and complete each pass in turn.

- No (Default)
- Yes

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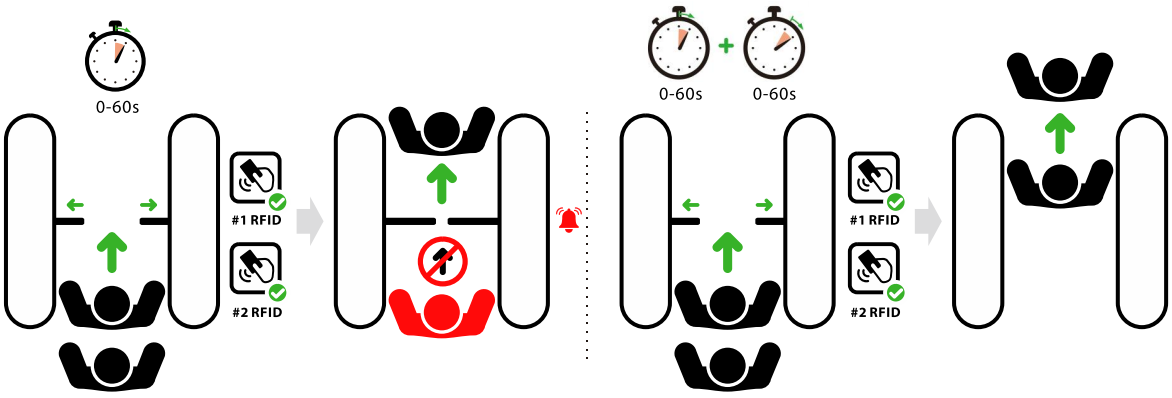

19. Swing Arm Type

- Standard swing arm (Default)
- Extra wide swing arm

20. System Working Mode

- Work mode (Default)
- Auto test
- System initialization

21. Voice Prompt Type

- Type: 0 (Default)
- Type: 1

Note: ZKBZ main board 1.2 and ZKBZ main board 1.3 are set to 1, and ZKBZ main board 1.4 is set to 0. Otherwise, the voice does not broadcast.

22. Version Number

- Version: V9.1.1

8 Maintenance

8.1 Chassis Maintenance

The chassis is made of SUS304 stainless steel or cold rolled sheet steel. If it has been used for a long time, the surface may have rust stains. Clean the surface thoroughly with a clean cloth on a regular basis. Coat the surface with anti-rust oil, but 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.

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9 Troubleshooting

No.	Failure Descriptions	Analysis and Solution
1	When the widened and heightened swing arm is installed, the device cannot open and close the gate normally.	Check menu #19 and ensure it is set to the “extra wide swing arm” type Try reducing the gate opening/closing speed in settings #6 & #7. Or check if there are any obstructions such as stickers on the swing arm.
2	The motor runs with abnormal noise or loud noise.	Please check and tighten the clutch fixing screws.
3	When closing the gate, the swing arm is not in place.	Need to reset the Zero position, refer to menu #1.
4	The turnstile keeps sounding an alarm after being powered on.	In the process of self-test, there are obstacles, please remove the obstacles, restart the self-test after power-on!
5	The main board reports a CAN communication error, and the main board reports "Initializing, please do not power off".	Check if the infrared is blocked or if the cabinet position is abnormally arranged.
6	When opening the gate, one side of the swing arm only opens to about 30°, and the motor runs weakly	Check the motor wiring, see if the servo driver has a red light on, replace the motor driver board or the motor.

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10 Packing List

The package consists of the following items:

	OTSG9000/SBTL8000 Series	2
	OTSG9200/SBTL8200 Series	1
	Expansion Screw M12*100	10 (SBTL8000 Series)
		6 (SBTL8200 Series)
	Stainless Steel Maintenance Wipes	2
	Maintenance Manual	1

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