

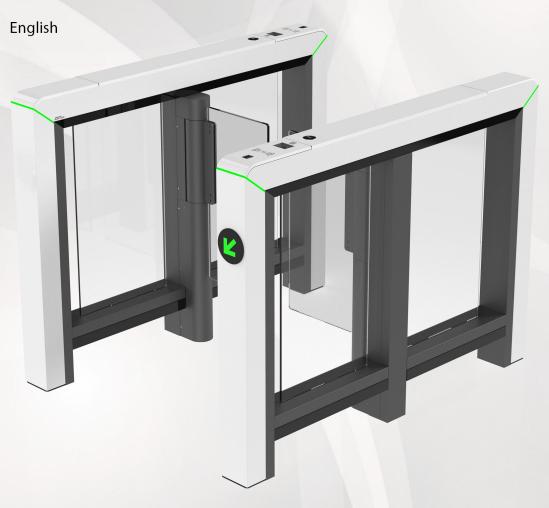
User Manual

Mars Pro-S1000 Series

Applicable Model(s): Mars Pro-S1000, Mars Pro-S1200

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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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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 Mars Pro-S1000 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 \star 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.	
\triangle	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.

ACautions:

- 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.

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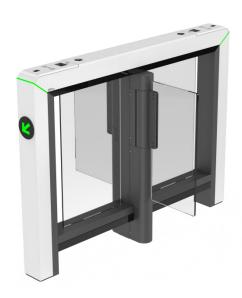
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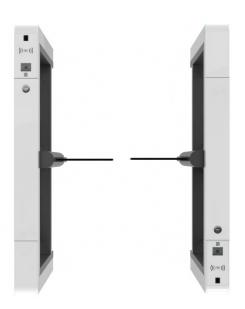
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1 Overview

The Mars Pro-S1000 Series swing barrier turnstile is an elegant high performance entrance control system designed for high-traffic volume. The Mars Pro-S1000 Series barriers are normally held in a locked position, thus denying access to the secured side. When the Mars Pro-S1000 Series correctly identifies the user's Card (RFID)/Fingerprint/QR code, etc. to verify the identity, its barriers swing automatically, thus allowing users passage to the secured side.









1.1 Features

Highly Durable and Low Maintenance Costs

- ♦ Modularized structure design
- ♦ Exposed mounting holes for easy installation
- ♦ Mainly made of cold rolled steel with powder coating finishing.

Intelligent Turnstile Controller

- ♦ General features and parameters settings on the controller's menu

LED Indicator

- ♦ Visual cues for correct walking direction
- ♦ Clear guidance with green and red illustration

Switchable Reader Panel

- ♦ Four panels available:
 - RFID only
 - RFID & Fingerprint
 - RFID & QR Code
 - RFID & Fingerprint & QR Code
- ♦ Reducing middlemen's inventory pressure
- ♦ Reducing installation time & expenses

Installation Place for Facial Recognition A&C Terminals

- ♦ Diameter: 34mm
- ♦ Integration with Facial Recognition, Temperature and Mask Detection Terminals

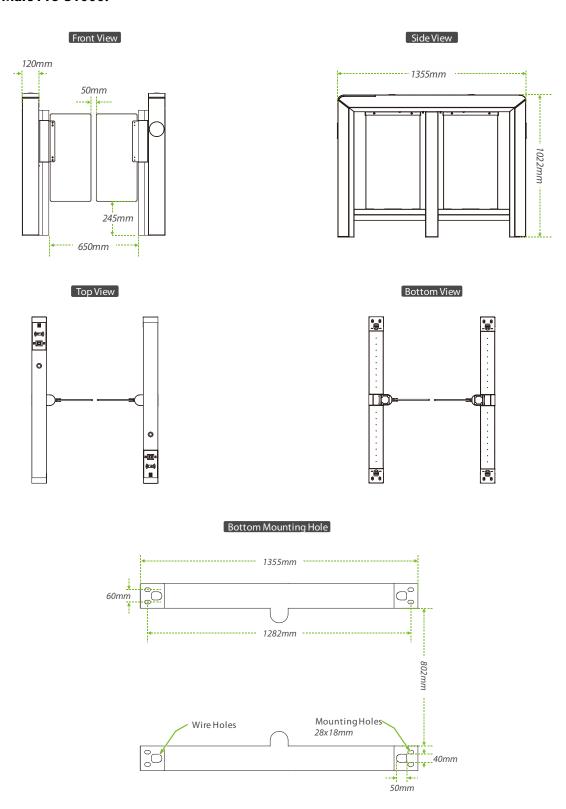
Infrared Sensors

♦ 16 pairs of infrared sensors for stronger tailgating detection

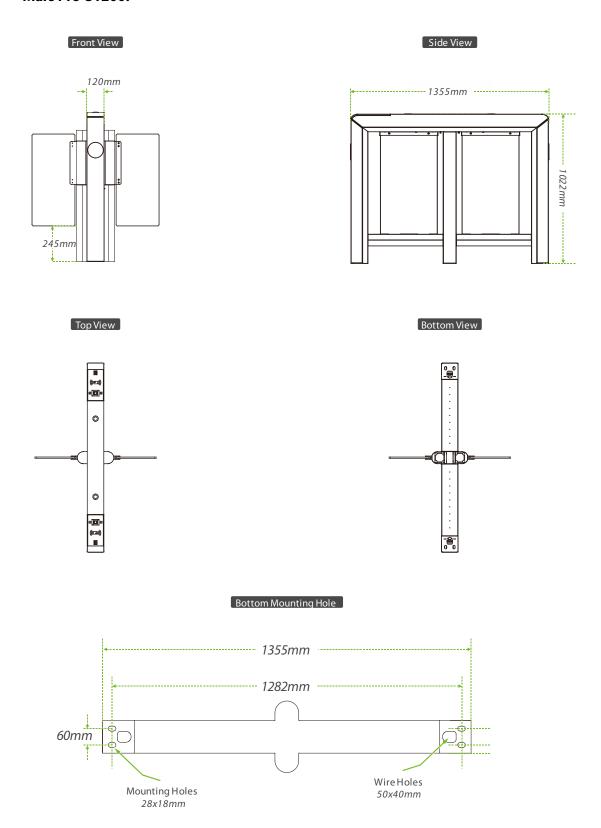
1.2 Specification

1.2.1 Appearance

Mars Pro-S1000:



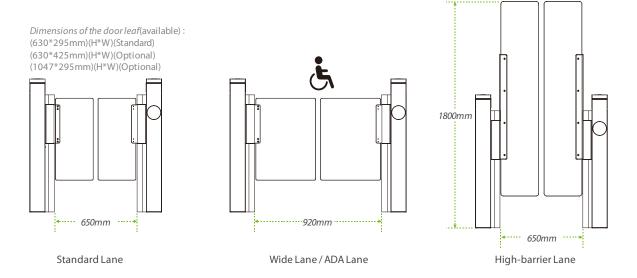
Mars Pro-S1200:



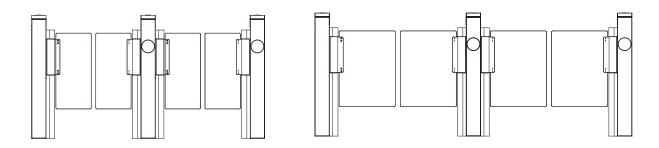
Door Leaf Specifications

The Mars Pro-S1000 and Mars Pro-S1200 can be combined to form a single, dual or multi-lane system, allowing the user to select the appropriate door leaf size according to actual needs.

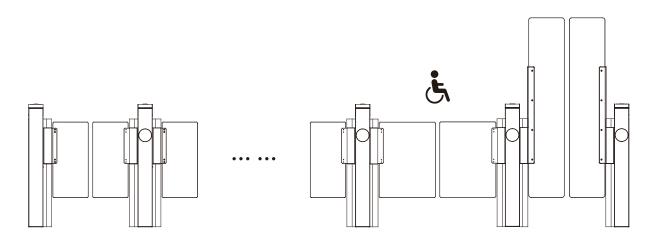
1) Single-lane



2) Dual-lane

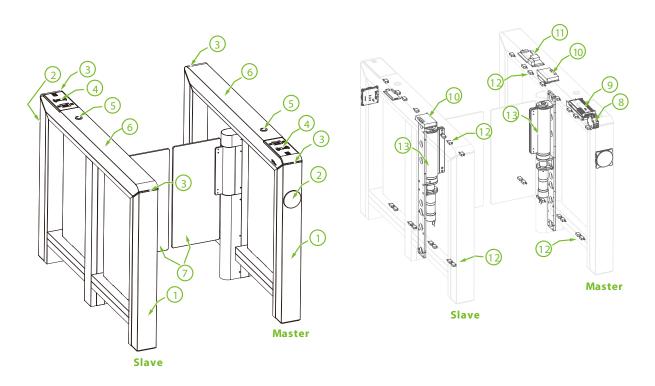


3) Multi-lane

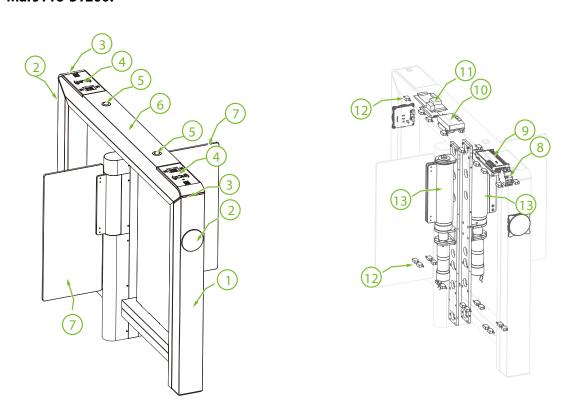


1.2.2 System Components

Mars Pro-S1000:



Mars Pro-S1200:



No.	Components	Descriptions	
1	Side Lid	Cold rolled steel	
2	Direction Indicator	Used to indicate the direction and status of gate passage	
3	Traffic Indicator	Used to indicate the passage status of the gate	
4	Authentication	Card (RFID)/Fingerprint/QR Code modules are available	
5	Reserve Mounting Holes	Reserved mounting holes for face verification devices.	
6	Top Lid	Cold rolled steel	
7	Swing Arm	Clear Acrylic(optional: Tempered Glass)	
8	Air Switch	When overload, short circuit, voltage reduction or disappearance occurs within the circuit, it can automatically cut off the circuit for reliable protection.	
9	Access Controller Board	PGIC access controller board (non-standard)	
10	Servo Motor Drive Controller	It is responsible for receiving control signals and converting them into current or voltage signals to accurately control the speed, position and torque of the motor to realize high precision and high performance of the gate.	
11	Turnstile Controller Board	The system's control center	
12	Infrared Sensor	It detects the position of the pedestrian and plays a role in ensuring safety and protection	
13	Core Component	Operating components of the turnstile	

1.2.3 Technical Specifications

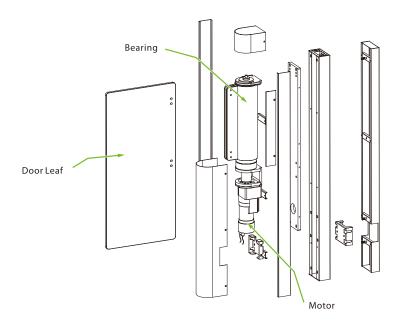
Model	Mars Pro-S1000	Mars Pro-S1200	
Green: Lane available		e available	
	Red: Lane unavailable		
Audio Indicator	Internal	l Buzzer	
Lane Type	Support single lane, du	ual-lane and multi-lane	
Lane Width	650mm (Standard),	, 920mm (Optional)	
Barrier Movement Type	Sw	ing	
Motor	Servo	Motor	
Movement Speed (Open/ Close timing)	0.6s per movem	ent (Adjustable)	
Speed of Throughput Maximum	30 / minute		
Lid Material	Cold roll	led steel	
Cabinet Material	Cold rolled steel		
	Clear Acrylic (Optional: Tempered Glass)		
Door Leaf Material	480*295mm (Standard)(H*W)		
	480*425mm (Optional)(H*W)		
IR Sensors	1047*295mm (Optional)(H*W) 16 Pairs (Option: ≤16 Pairs)		
in Selisors	•		
Motherboard Function	System Configuration, Access Mode Configuration, Anti-pinch Configuration, Anti-tailgate Configuration, etc.		
Power Supply	120V / 240V AC@50 to 60 Hz		
Fire Signal	Input for Voltage Free Contact		
Noise Level	Less than 60dB		
MTTR	Less than 60 minutes		
MCBF	10 Million		
Weight	Gross Weight (160kg) Net Weight (110kg)	Gross Weight (90kg) Net Weight (65kg)	
Lane width(mm)	650mm (optional- 920mm) high:1200mm(Max high 1800mm)		
Footprint(mm*mm)			
Dimensions(L*W*H)	1355*120*1022(mm)Cold rolled steel	1355*120*1022(mm)	

Dimension with packing(L*W*H)	1510*365*1216(mm)(2 boxes)	1510*365*1216(mm)
Operating Temperature	-25°C to 65°C (Standard) -40°C to 80°C (Optional)	
Operating Humidity	20% to 95% RH (Non-condensing)	
Certifications	Certifications CE, FCC	
Protection Level	IP34	
Supported Software	ZKBio CVAccess / ZKBio CVSecurity (Compatible with the software when connected with the control panel)	
Security Features	Intrusion, Tailgating, Wrong Way Direction, Leave Aisle Timeout	
Product Delivery	Pre-assembled	
Application Environment	Indoor	
Site Preparation	Flat & Level Finished Floor (Base Plate in Options for unfinished Floor)	
Emergency Mode	Supports	
Security Level	Med	lium

1.3 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, Frame, Bearing and Door Leaf.

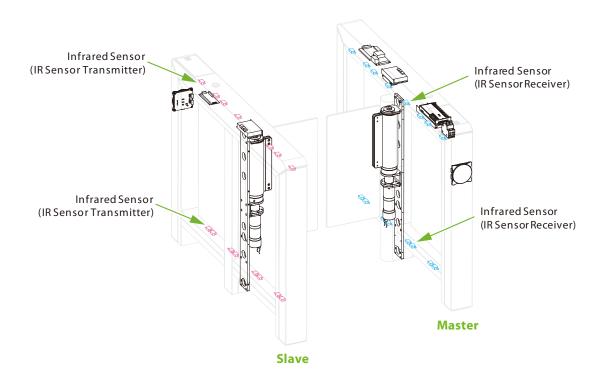


1.4 Electronic Control System

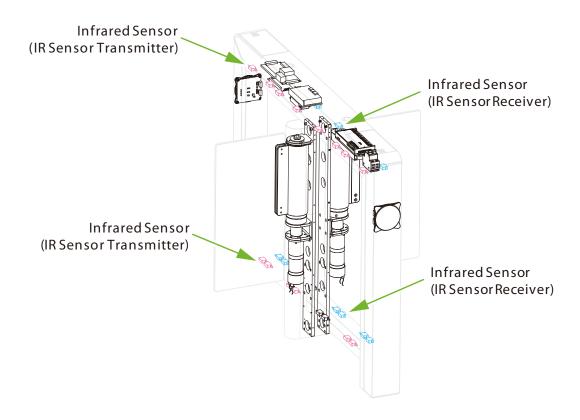
The electronic control system of a turnstile is mainly composed of the Servo Motor Driver, Infrared Sensor, Turnstile Control Board, Traffic Indicator and Alarm.

- Card Reader: The reader reads the data in the card and sends it to the Access Controller.
- **Fingerprint Reader:** The device compares the fingerprint that is being pressed onto the fingerprint sensor with all the fingerprint data and sends it to the Access Controller.
- **QR Code Reader:** The sensor compares the acquired QR code with all QR code data registered in the device and sends it to the Access Controller.
- **Infrared Sensor:** It detects the position of the pedestrian and plays the role of safety protection.
- **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.

Mars Pro-S1000:



Mars Pro-S1200:



2 Authentication Methods

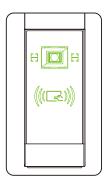
Users can freely choose to configure the authentication module according to actual needs. The following options are included.

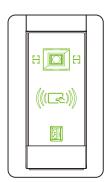
Streamlined Under Mount Options:

RFID only, RFID & Fingerprint, RFID & QR Code, RFID & Fingerprint & QR Code.



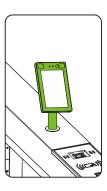






Top Mount Option:

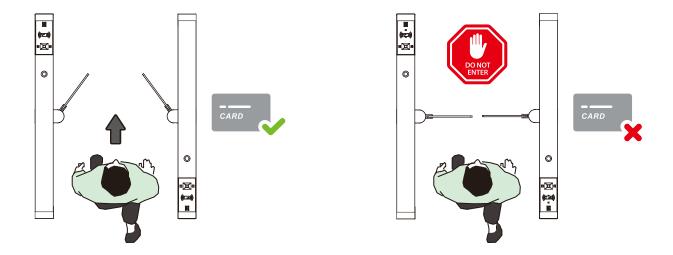
Mounting Pole (Compatible with ProFace X series / SpeedFace V5L / Elite Pass).



2.1 Card Verification

When the device is configured with a card swipe 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.

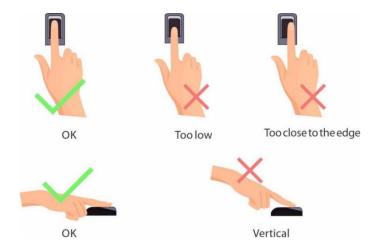


2.2 Fingerprint Verification★

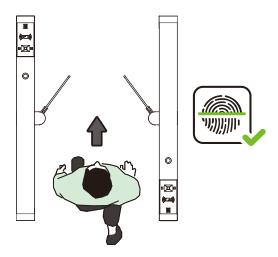
In this verification mode, the device compares the fingerprint that is being pressed onto the fingerprint reader with all the fingerprint data sends it to the Access Controller.

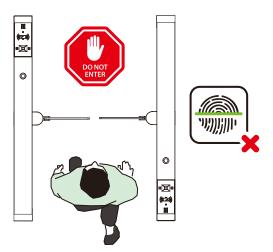
The device enters the fingerprint authentication mode when a user presses his/her finger onto the fingerprint scanner.

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.

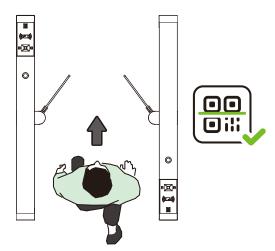


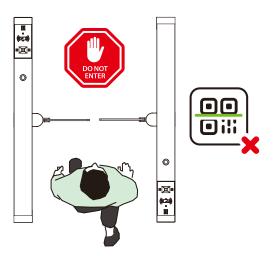


2.3 QR code Verification★

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★

In this verification mode, the device compares the collected facial images with all face data registered in the device and then sends it to the Access Controller.

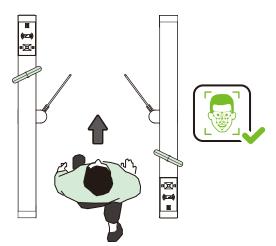
Try to keep the face in the centre of the screen during authentication. Please face towards the camera and stay still during face registration.

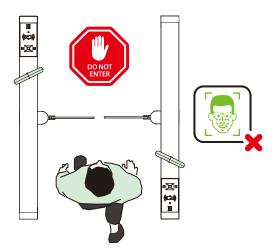
Recommended Standing Posture and Facial Expression:





Note: Please keep your facial expression and standing posture natural while enrollment or verification.





3 Installation

3.1 Installation Tools

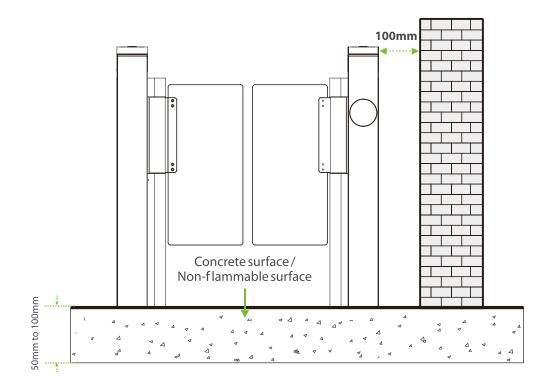
- Tapeline
- Marker Pen
- Pencil
- Percussion Drill
- Screwdriver
- Wrench
- Hex Wrench
- Cutting Machine

3.2 Installation Requirements

- 1. It is recommended that the turnstile must be installed on a horizontal solid platform with a height of **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

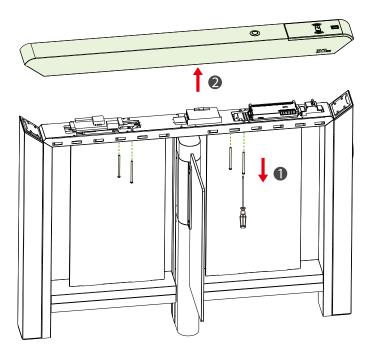
- **1.** Before installation begins, prepare installation tools, check the device and the accessories, and clear the installation base.
- 2. Make sure that the appliance is mounted on a concrete surface or other non-f flammable surfaces.
- **3.** The installation position of the turnstile depends on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

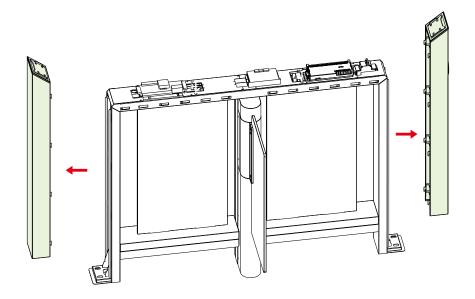


3.4 Installation Cabinet

Stept 1 Remove the Top lid and Side Lid

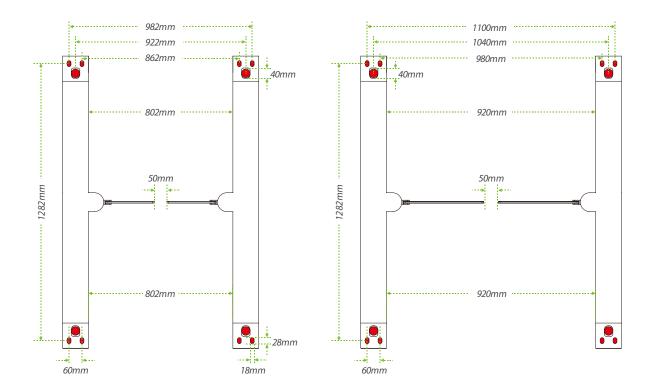
- 1. Remove the four screws hidden under the top lid, then remove the top lid.
- 2. Remove the side lid that hang on the device.





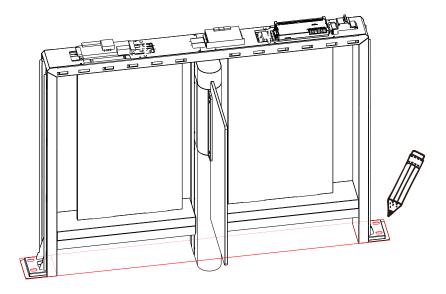
Stept 2 Determine the Mounting Location

- 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.



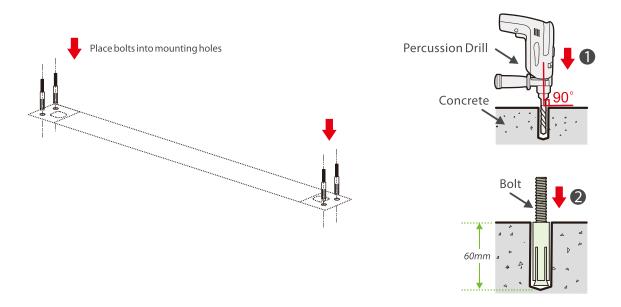
Stept 3 Marker Position

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.



Stept 4 Drill Holes and Place Bolts

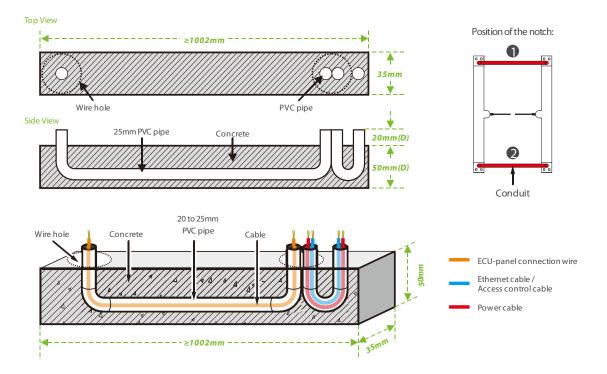
- 1. Using a concrete drill bit, drill the mounting holes 60mm in depth at the center of each marked location.
- 2. Then insert the bolts vertically into the mounting holes as shown at right.
- 3. Make sure the bolts are placed in place. Use a hammer to tap the bolts into place, if needed.



Stept 5 Wireway Laying

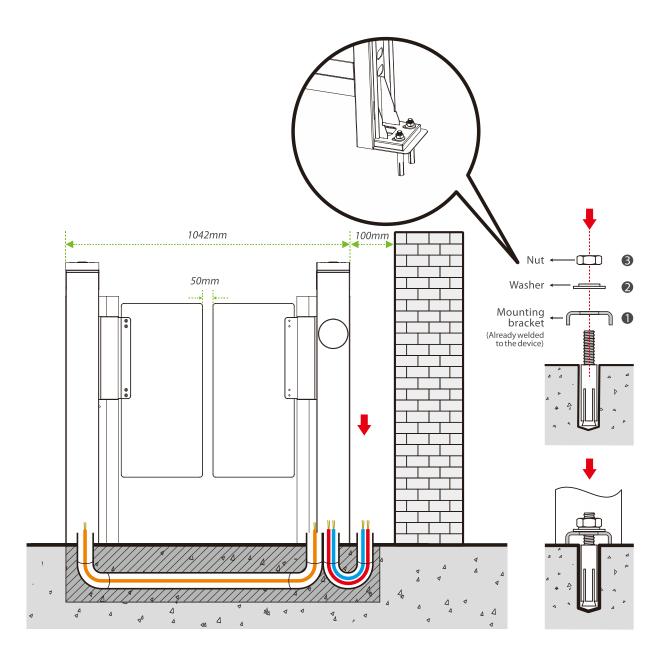
1. Dig a recess of 50mm depth between the wire holes on both sides of the channel with the dimensions shown below. Recesses can be dug at positions 1 and 2.

- 2. Then lay two 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.



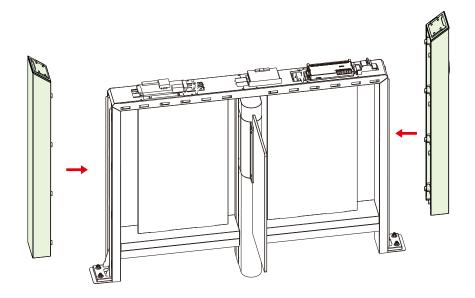
Stept 6 Fixed Cabinet

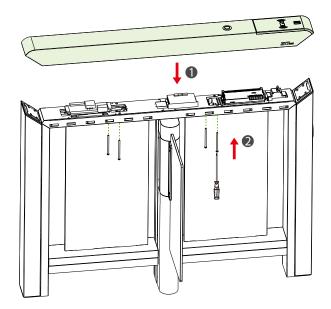
- 1. After laying the PVC pipe, place the cabinet alignment bolts back into the mounting position.
- 2. Then insert the four washers and nuts into the bolts one by one.
- **3.** Tighten the nuts to hold the cabinet in place. Don't tighten it completely until after you're sure it won't move anymore. The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



Stept 7 Close the Side Lid and Top Lid

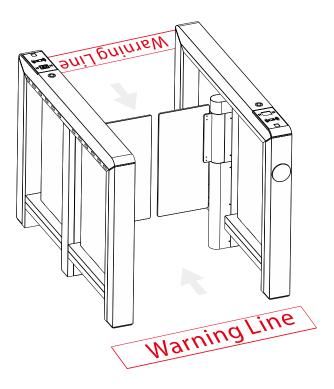
Close the side lid and top lid, and secure with screws.





Stept 8 Marking the Warning Line

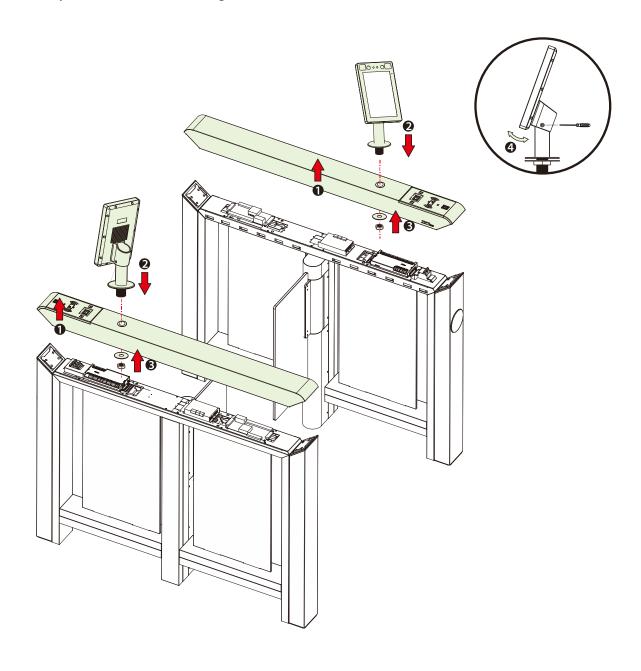
- 1. It is recommended that warning lines be marked on the ground and used to alert users.
- **2.** A warning line can alert users to wait outside the line until the previous user completes the verification process and passes through the turnstile.



3.5 Accessory Installation

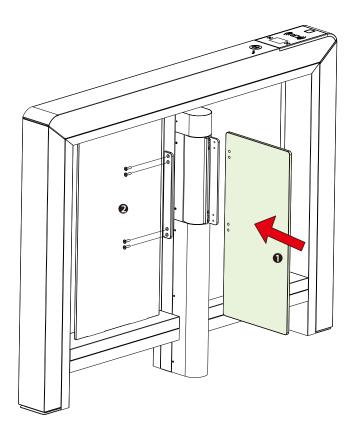
3.5.1 Facial Equipment Installation

- 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.



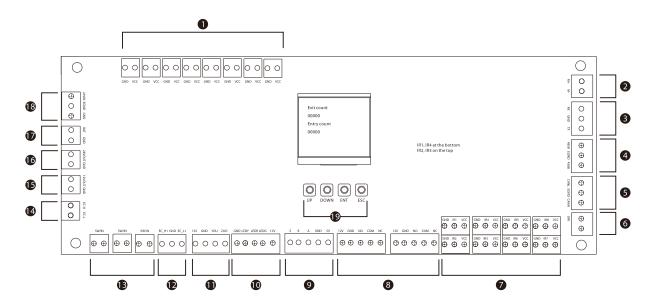
3.5.2 Door Leaf Installation

- 1. Push the door leaf into the clamping block.
- 2. Lock the door leaf with the screws.



4 Terminal Description

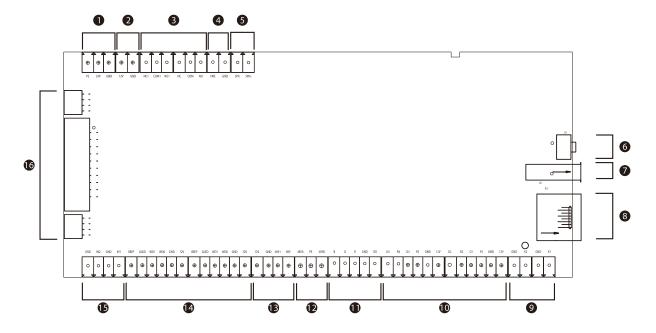
4.1 ZKBZ Board



NO.	Terminal	Descriptions
1	GND, VCC *8	12V infrared power supply of swing barrier
2	M+, M-	Motor of swing barrier
3	RX, GND, TX	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	8-core 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, Right Open, Left Open
14	EC-H, EC-L	Clutch of the swing barrier
15	12VOUT, GND	12V power supply output
16	24VOUT, GND	24 V power supply for the main board of the swing barrier
17	BAT, GND	Fire power supply for swing barrier

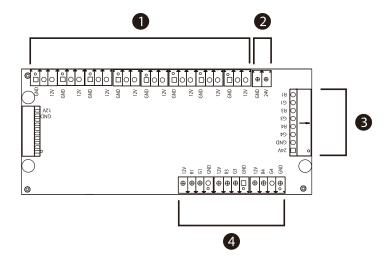
18	24VIN, EGND, GND	24V power supply input
19	UP, DOWN, ENT, ESC	Control buttons for setting menu parameters.

4.2 PGIC Controller (Additional accessory)



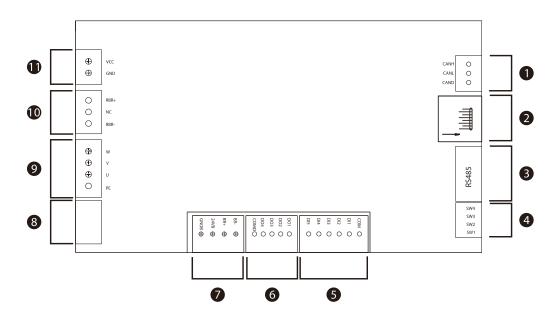
NO.	Terminal	Descriptions
1	PE, 24v, GND	24V DC power supply input
2	12V, GND	12V DC power supply input
3	NC, COM, NO	Auxiliary input
4	FIRE, GND	Fire signal
5	SPK-, SPK+	Speaker
6	-	Reset
7	-	USB slot
8	-	Ethernet/POE interface
9	GND, K *2	Door
10	G, R, G, R, GND, 12V *2	Exit or entry status indicator
11	B, G, R, GND, 12V	Status indicator
12	485A, PE, 485B	RS485
13	12V, GND, 485+, 485-	Exit RS485
14	BEEP, GLED, WD1,WD0, GND, 12V	Wiegand reader
15	GND, IN *2	Auxiliary input
16	-	IR sensor

4.3 IR Board



NO.	Terminal	Descriptions	
1	GND, 12V *9	Infrared sensor transmitting port	
2	GND, 24V	24V power supply output	
3	R1, G1, R3, G3, R4, G4, GND, 24V	8-core connection wire	
4	12V, R, G, GND *3	Left side indicator	

4.4 Master/Slave Motor Driving Controller



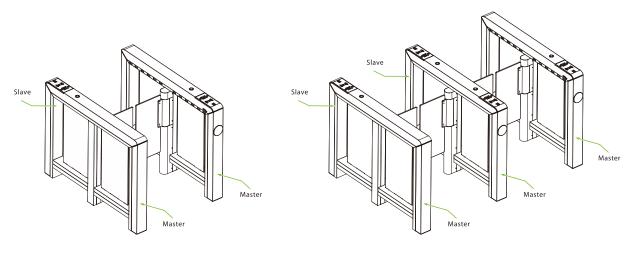
NO.	Terminal	Descriptions
1	CANH, CANL, CGND	CAN communication

2	Ethernet	Ethernet communication between master and slave drives
3	RS485	RS485 communication between master and slave drives
4	SW4, SW3, SW2, SW1	The master's SW2 needs to be dialed down, the slave 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	VDC, GND	24V power supply input

5 Wiring Instructions

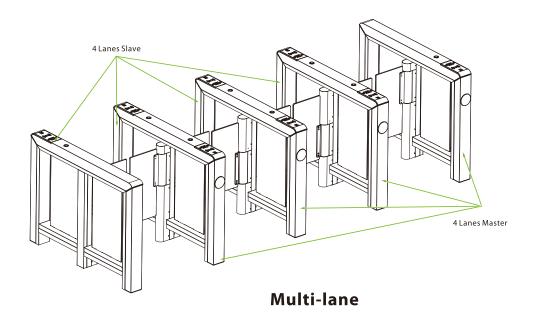
5.1 Master-slave Location

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



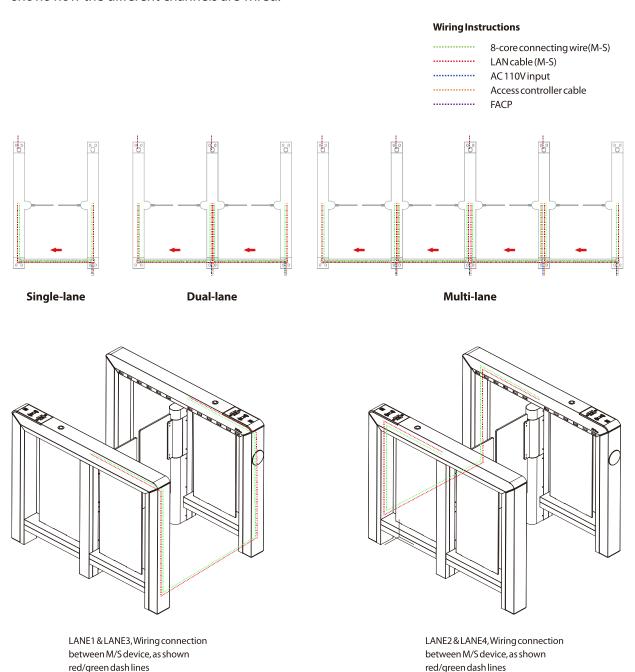
Single-lane

Dual-lane



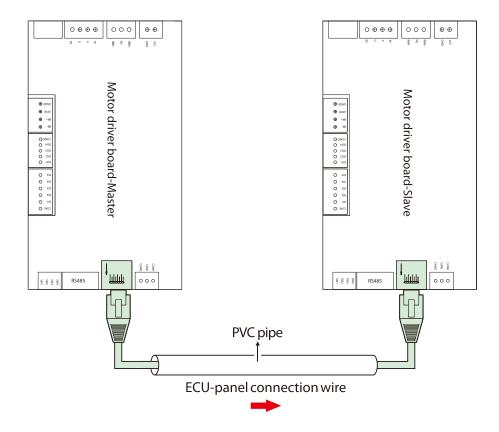
5.2 Wiring Methods

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.



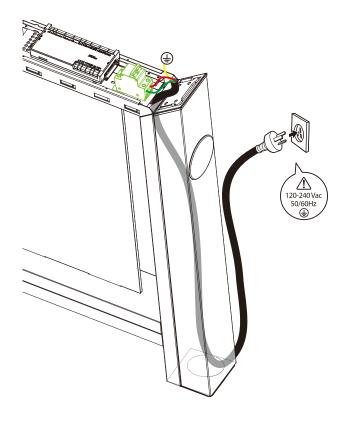
5.3 Wiring the ECU-panel Connection Cable

Insert the ECU-panel connection wire through the PVC pipe and then into the Ethernet ports of the master and slave motor driving controller respectively to communicate via Ethernet, as shown in the following figure.

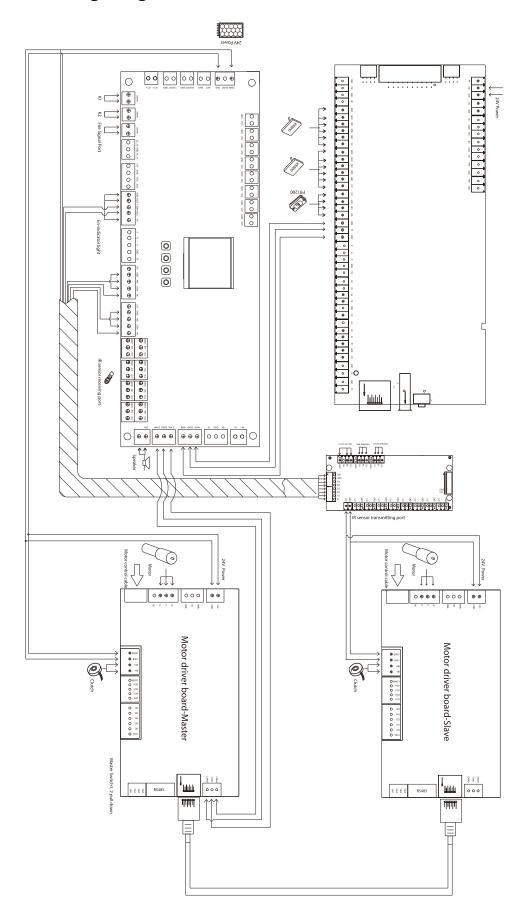


5.4 Power and Air Switch Wiring

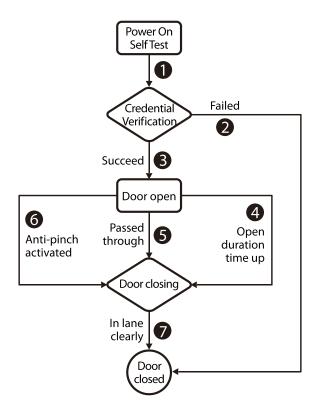
120Vac and 240Vac primary power must be hard wired in place (Note: must be grounded). It is strongly recommended that a licensed electrician perform this procedure in accordance with applicable local codes.



5.5 System Wiring Diagram



6 Operation Process

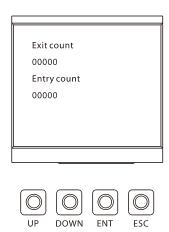


1. POST (Power On Self Test)

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 <u>5.5 Power and air switch wiring</u> for connecting the air switch 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.



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.

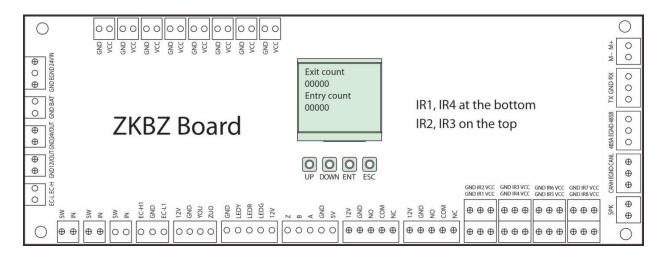
If the pedestrian enters the passage but forgets to verify identification, or if the card by the pedestrian is invalid, the system will prompt an audible alarm to warn the pedestrian to stop passing. The alarm signal will not be cancelled until the passenger retreats from the passage. The pedestrian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

7 Machine Operation

7.1 Operation Buttons Description

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

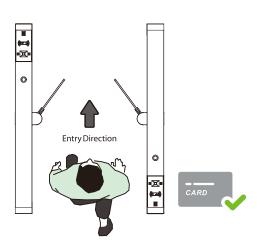
Tips: For each function, you need to press **ENT** key first to start changing the parameters.

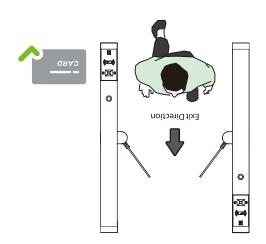
1. Correct Barrier Position

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

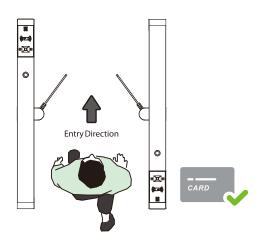
Correction Type:

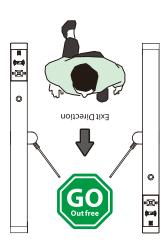
- Zero position (Default)
- Left opening position
- Right opening position
- 2. Opening Mode Setting
- Two-way controlled, both need verification (Default)



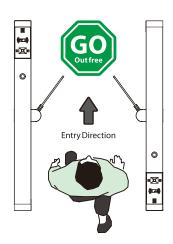


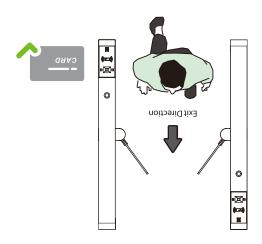
In need verification, Out free





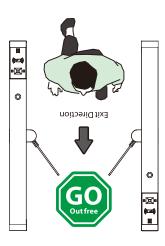
In free, Out need verification



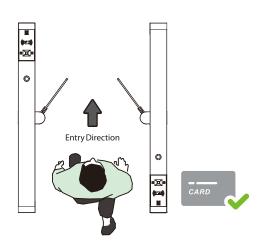


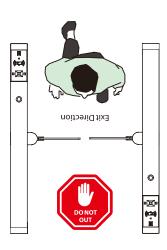
Two-way free



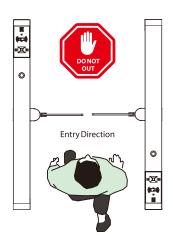


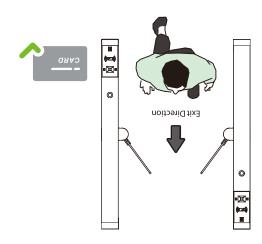
In need verification, Out prohibited





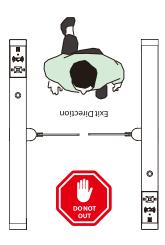
In prohibited, Out need verification



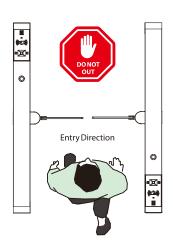


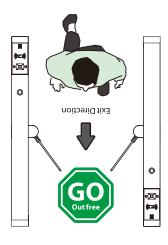
In free, Out prohibited



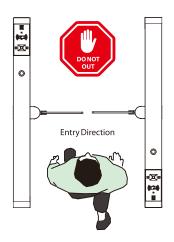


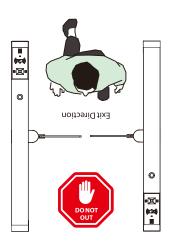
In prohibited, Out free



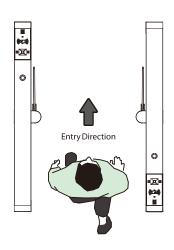


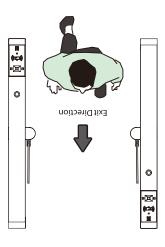
Two-way prohibited





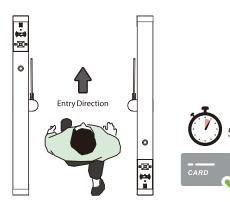
Normal Open

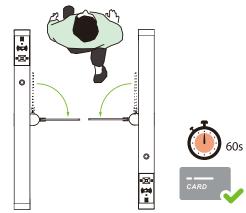




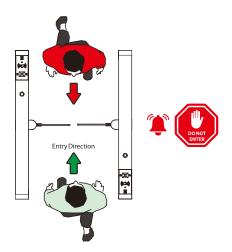
3. Open Duration Time

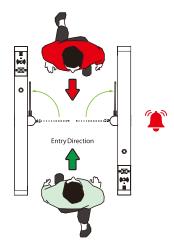
It can be set the valid time period after successful verification, after arriving at the set time, the gate will close automatically, the larger the number set, the longer the valid time. The valid value is 2 to 60 seconds, and the default value is 5s.

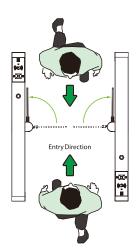




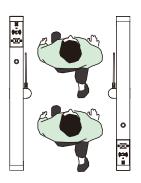
- 4. False Direction Entry
- Close the door and voice alarm
- Only voice alarm (Default)
- Close detection

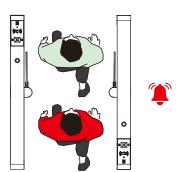


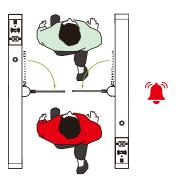




- 5. Trailing Mode
- Close detection
- Only voice alarm (Default)
- Close the door and voice alarm

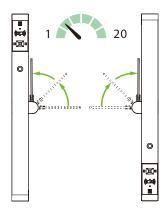


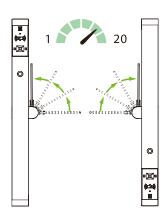




6. Opening Speed

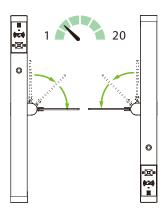
Set the gate opening speed to open the gate. The larger the number is set, the faster the speed. The gate opening speed value can be set between 1 to 20 and the default value is 3.

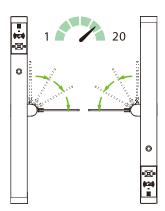




7. Closing Speed

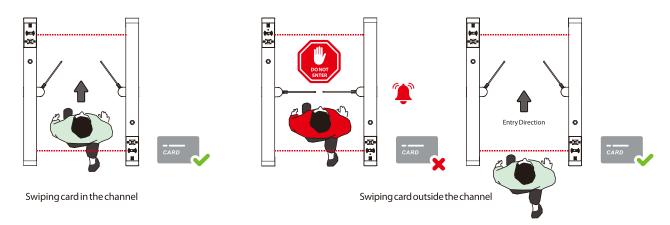
Set the gate closing speed to close the gate. The larger the number is set, the faster the speed. The gate closing speed value can be set between 1 to 20 and the default value is 3.





8. Swiping Limitations

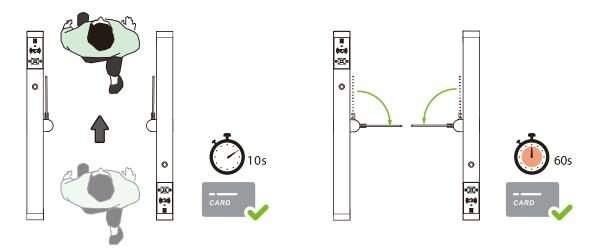
- Allowed swiping card in the channel (Default)
- Forbidden swiping card in the channel



- 9. Reset Counter
- Out counter
- Entering counter
- All (Default)

10. Delay Closing Gate Time

Set the delay time of gate closing after passing. The valid value for gate closing delay time can be set between 0 to 60s and the default value is 10s.



11. Unlock Brake Method

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

12. Brake Starting Angle

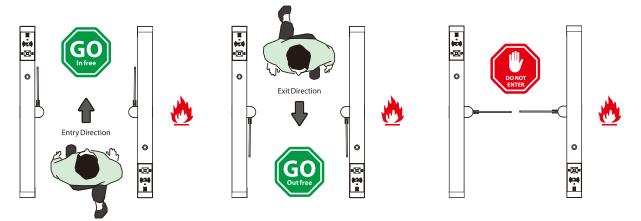
The valid value for brake activation angle can be set between 3 to 10 and the default value is 3.

13. Firefighting Signal Setting

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

- Right open
- Left open (Default)
- Close

Note: Close detection, the gate will not open automatically in the inbound/outbound direction in case of fire, and it needs to be verified to open the gate.



14. Volume Setting

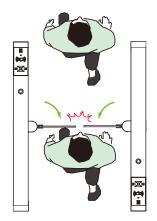
Adjust the volume of the device, the valid value can be set between 1 to 16 and the default value is 15.

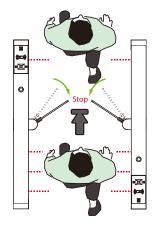
Close



15. IR Anti-pinch Setting

- No-activated
- Stop-activated (Default)





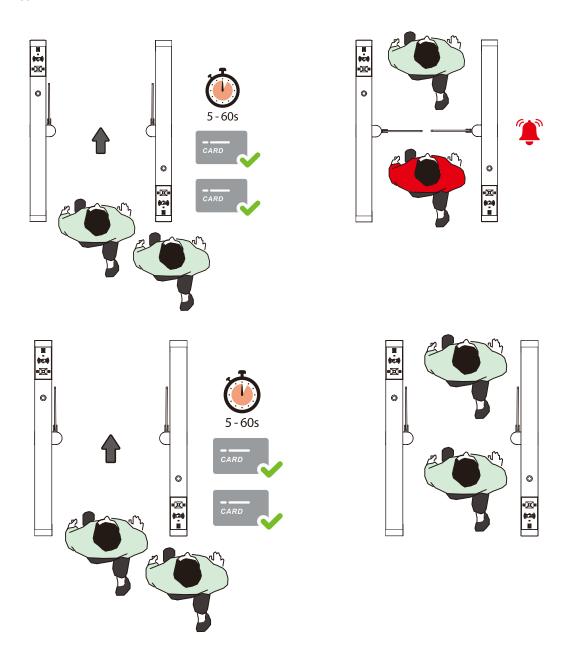
16. Anti-pinch Area Setting

- In and out of the infrared (Default)
- All infrared zone anti-pinch

17. 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



- 18. Swing Arm Type
- Standard swing arm (Default)
- Extra wide swing arm
- 19. System Working Mode
- Work mode (Default)
- Auto test
- System initialization
- 20. Voice 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.

- 21. Version Number
- Version: V9.0.8

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 master and slave 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 swing 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:

Mars Pro-S1000:

	Mars Pro-S1000 (Master and Slave)	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

Mars Pro-S1200:

	Mars Pro-S1200	1
	Power Cable	1
	Card	1
(]= ====[3]	Expansion Screw M12*100	4
0000	Washer	4
000	Expansion Screw Washers	4
	Stainless Steel Maintenance Wipes	1
	Hex Wrench	1

Revision History

Revision	Date	Author	Reviewer	Description
V1.0	09/28/2021	Yang Kaijin		Original Document
V1.1	02/17/2025	Huang Liye		The control board, and wiring diagram have been changed.

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