

Swing Barrier

Quick Start Guide



V1.0.2

Foreword

General

This manual introduces the wiring, installation and wiring of the swing turnstile (hereinafter referred to as "the Turnstile"). Read carefully before using the device, and keep the manual safe for future reference.

Safety Instructions

The following signal words might appear in the manual.

Signal Words	Meaning
 DANGER	Indicates a high potential hazard which, if not avoided, will result in death or serious injury.
 WARNING	Indicates a medium or low potential hazard which, if not avoided, could result in slight or moderate injury.
 CAUTION	Indicates a potential risk which, if not avoided, could result in property damage, data loss, reductions in performance, or unpredictable results.
 ESD	Electrostatic Sensitive Devices. Indicates a device that is sensitive to electrostatic discharge.
 ELECTRIC SHOCK	Indicates dangerous high voltage. Take care to avoid coming into contact with electricity.
 LASER RADIATION	Indicates a laser radiation hazard. Take care to avoid exposure to a laser beam.
 TIPS	Provides methods to help you solve a problem or save time.
 NOTE	Provides additional information as a supplement to the text.

Revision History

Version	Revision Content	Release Time
V1.0.2	Update configuring parameters.	March 2025
V1.0.1	Update the wiring.	March 2023
V1.0.0	First release.	February 2023

Privacy Protection Notice

As the device user or data controller, you might collect the personal data of others such as their face, fingerprints, and license plate number. You need to be in compliance with your local privacy protection laws and regulations to protect the legitimate rights and interests of other people by

implementing measures which include but are not limited: Providing clear and visible identification to inform people of the existence of the surveillance area and provide required contact information.

About the Manual

- The manual is for reference only. Slight differences might be found between the manual and the product.
- We are not liable for losses incurred due to operating the product in ways that are not in compliance with the manual.
- The manual will be updated according to the latest laws and regulations of related jurisdictions. For detailed information, see the paper user's manual, use our CD-ROM, scan the QR code or visit our official website. The manual is for reference only. Slight differences might be found between the electronic version and the paper version.
- All designs and software are subject to change without prior written notice. Product updates might result in some differences appearing between the actual product and the manual. Please contact customer service for the latest program and supplementary documentation.
- There might be errors in the print or deviations in the description of the functions, operations and technical data. If there is any doubt or dispute, we reserve the right of final explanation.
- Upgrade the reader software or try other mainstream reader software if the manual (in PDF format) cannot be opened.
- All trademarks, registered trademarks and company names in the manual are properties of their respective owners.
- Please visit our website, contact the supplier or customer service if any problems occur while using the device.
- If there is any uncertainty or controversy, we reserve the right of final explanation.

Important Safeguards and Warnings

This section introduces content covering the proper handling of the Turnstile, hazard prevention, and prevention of property damage. Read carefully before using the Turnstile, comply with the guidelines when using it, and keep the manual safe for future reference.

Transportation Requirement



Transport the device under allowed humidity and temperature conditions.

Storage Requirement



Store the device under allowed humidity (40%–65% (RH)) and temperature (0 °C to + 40 °C) conditions.

Installation Requirements



WARNING

- Do not connect the power adapter to the Turnstile while the adapter is powered on.
- Do not connect the Turnstile to two or more kinds of power supplies, to avoid damage to the Turnstile.
- Please follow the electrical requirements to power the device.
 - ◇ Following are the requirements for selecting a power adapter.
 - The power supply must conform to the requirements of IEC 60950-1 and IEC 62368-1 standards.
 - The voltage must meet the SELV (Safety Extra Low Voltage) requirements and not exceed ES-1 standards.
 - When the power of the device does not exceed 100 W, the power supply must meet LPS requirements and be no higher than PS2.
 - ◇ We recommend using the power adapter provided with the device.
 - ◇ When selecting the power adapter, the power supply requirements (such as rated voltage) are subject to the device label.



- Install the Turnstile on a stable surface to prevent it from falling.
- Do not place the Turnstile in a place exposed to sunlight or near heat sources.
- Keep the Turnstile away from dampness, dust, and soot.
- Install the device in a well-ventilated place, and do not block its ventilation.
- Use an adapter or cabinet power supply provided by the manufacturer.
- The Turnstile is a class I electrical appliance. Make sure that the power supply of the Turnstile is connected to a power socket with protective earthing.

Operation Requirements



- Make sure that the power supply is correct before use.
- Do not unplug the power cord on the side of the Turnstile when the adapter is powered on.
- Operate the Turnstile within the rated range of power input and output.
- Transport, use and store the device under allowed humidity and temperature conditions.
- Do not drop or splash liquid onto the Turnstile, and make sure that there is no object filled with liquid on the Turnstile to prevent liquid from flowing into it.
- Do not disassemble the Turnstile without professional instruction.
- When the Turnstile is used with access controller and the lock port connects to the K1 or K2 port of the main control board, configure the unlock duration for the access controller as 0.2 seconds.
- Prepare a separate power adapter when install a face recognition access controller.

Maintenance Requirements



- After the installation, remove the protective film and clean the Turnstile.
- Regularly perform maintenance on the Turnstile to ensure that it works properly.
- If the Turnstile is installed near places with poor air, such as a swimming pool entrance, within 50 km of the sea or a construction site, then maintenance must be performed more frequently on the stainless cover.
- Do not use paint thinner or any other organic agent during maintenance.
- When using a face detection component, apply waterproof silicon sealant to the installation position.

Precautions



- Pregnant women, the elderly, and children must be accompanied when passing the Turnstile.
- Children less than the height of 1 m must pass the Turnstile in the arms of or alongside an adult.
- Do not stay or play in the passage.
- Make sure that your suitcase passes in the front or alongside you.
- Only one person can pass through at a time. Do not tailgate a person, linger in the passage or break through the passage.
- Violent impact might damage the machine core and shorten the service life of the Turnstile.
- Make sure that the Turnstile is correctly grounded to prevent personal injury.
- Do not use the Turnstile when thunder occurs.



- When authorizing a person to pass through the Turnstile, there should be no person on the opposite side of the Turnstile, otherwise the barriers will remain unlocked until the person on the opposite side exits.
- Pass through the Turnstile as soon as possible after authorization. If the person does not enter within the specified time, the system will automatically close the barriers.

- When multiple persons are entering, they can pass with continuous authorization when memory mode is enabled. But the interval between continuous authorizations is recommended to be 2 s–5 s.
- Pay attention to the status of the indicator when verifying a person's identity. Red indicates that the identity of the person was not verified. Green indicates that their identity was successfully verified, and that the person can pass through.
- Do not try to forcibly pass through the passage. This Turnstile supports intelligent anti-tailgating and anti-reverse intrusion. If you forcibly break through, the system will automatically lock, closing off the passage. This can result in a person becoming injured.
- The Turnstile will not correctly recognize the authorized card if it is used together with other cards.
- Keep the authorized card well to make sure it works properly.
- Do not pass items through the Turnstile, otherwise the Turnstile will consider the item as unauthorized.
- If the Turnstile is used with the face recognition access controller, when the lock port on the face recognition access controller is connected to the K1 or K2 port on the main control board on the Turnstile, the unlock duration for the face recognition access controller should be configured as 0.2 seconds.
- If the Turnstile is used with the face recognition access control device, the separate power adapter must be prepared.

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1 Product Information

1.1 Brief Introduction

The turnstile is a 2-way access control device designed for places with high class security requirements. It is easy to combine IC access control, which realizes the intelligent and efficient management of passage.

Features:

- With fault self-checking and alarm prompt function, it is convenient for users to maintain and use.
- Various passage modes such as card swiping and door opening can be set.
- Anti-collision function. The barrier arms will be locked automatically when the opening signals are not received.
- Illegal break-in and tailgating alarm with sound.
- Infrared anti-pinching function and physical anti-pinching function. When the door is closed, it will rebound and open.
- Overtime automatic reset. If person does not pass through within the specified time, the barrier arm will automatically close. The passing time can be customized (The default time is 5 s).
- Uniform standard external ports, which can be connected with a variety of access control devices.

1.2 Technical Parameters

Table 1-1 Technical parameters

Parameters	Description
Housing material	304 stainless steel
Input power	100 VAC–240 VAC
Working voltage	24 VDC
Motor	24 V brushless motor
Working temperature	-20°C to +70°C (Add thermostat below 0°C)
Working environment	10%–95% (RH), non-condensing
Unlock signals	Passive signals (relay signals, dry contact signals)
Installation place	Indoor
Running noise	≦ 75 dB
Response time	0.2 s
Passage rate	20–60 people/min

1.3 Terms and Components

Table 1-2 Term description

Parameters	Description
Single mechanism turnstile	Turnstile with only one barrier arm.
Double mechanism turnstile	Turnstile with barrier arm on each side.
Main cabinet	The turnstile cabinet with infrared receiver mounted to it.
Sub cabinet	The cabinet with infrared transmitter and works with the main cabinet to create a lane.
Home position	The home position is the starting or initial position from which the barrier arms rotates to allow passage.

Table 1-3 Components description

Parameters	Description
Access control device	IC card access control.
Brushless main control board	The control center of the system. When it receives unlock signals, it controls motor to open the turnstile, the direction indicator turns green. The main control board also receives signals from hall sensor and infrared sensor.
Infrared sensor	Detects the position of people in the lane and has the anti-pinching function.
Brushless Motor	Drives the core mechanism to open or close barrier arms.
Power switch	Supplies power.

1.4 Working Principle

- After the power-on self-test, the system enters into working mode.
- After valid identity is verified, the access control system sends unlock signals to the main control board.
- The main control board receives unlock signals, and controls motor to open the barrier arms.
- When people pass through the turnstile, the infrared sensor detects the position of people and sends signals continuously to the main control board. The barrier arms are not closed until people leave the lane.
- If unauthorized personnel attempt to enter, sound alarms will be triggered and will not stop until they leave the lane.

2 Installation

2.1 Precautions

- Please read this manual carefully before installation.
- The turnstile must be correctly placed; the left cabinet and right cabinet must be aligned.
- If the turnstile is installed outdoors, it must be installed on a cement platform (100 mm–200 mm high) to prevent moisture, and install ceilings and other sunscreen, rain protection facilities.
- Make sure the turnstile is well grounded.
- Make sure all wires are properly connected before power-on.
- Test all functions before using.

2.2 Preparations

Prerequisites

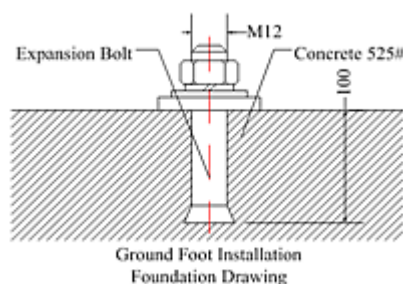
Tools required:

- A set of hexagon spanner.
- Cross screwdriver (6 mm).
- Open spanner (17 mm–19 mm).
- Impact drill (including D16 and D14 drills).
- Screw driver and other common wiring tool.
- Millimeter.
- M12x100 expansion screws 8pcs.
- Cable Tester.

Procedure

- Step 1 The installation site must be evaluated before installation, including proper spacing, a firm foundation, and separate conduit runs for power and data lines.
- Step 2 Place the turnstiles on the desired place and make sure they are aligned and placed in order. For example, A1 on one side and a1 on the other side.
- Step 3 Drill channels in the ground to place the PVC conduits.
- Step 4 Pull the power cable (RVV3*1.5 mm), interconnecting cable (RVV3*0.5 mm) and 2 communication cables through the conduits. Strong electricity and weak electricity must be separately placed in conduits.
- Step 5 Use a pencil to mark each anchor hole location. Use a concrete drill bit to drill the anchor holes at the center of each marked location, and then insert the expansion bolts into each drilled holes.

Figure 2-1 Insert the expansion bolts



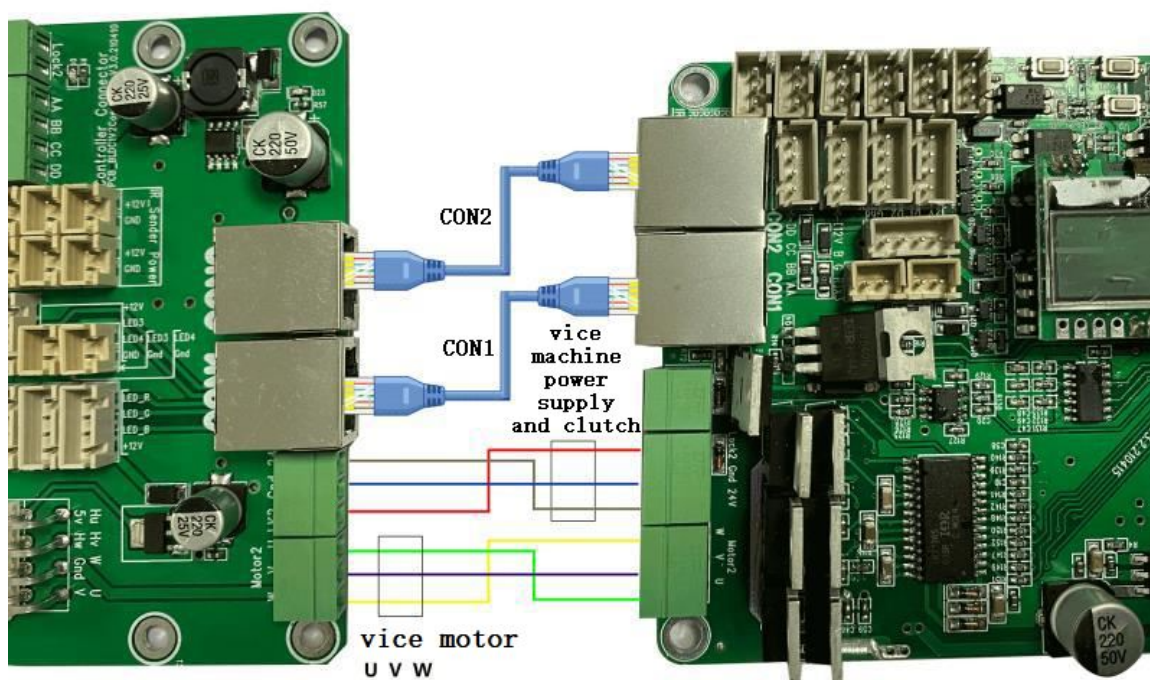
- Step 6 Maneuver each cabinet over the anchor locations, and insert the nuts.
- Step 7 Make sure all cabinets are aligned, and perform turnstile functionality tests to make sure it can work properly.
- Step 8 Tighten the nuts to secure the cabinets.

2.3 Wiring

Procedure

- Step 1 Connect the main cabinet and the sub cabinet.
Main cabinet and sub-cabinet are connected through 2 network cables and 2 interconnecting cables cords.

Figure 2-2 Connect main cabinet and sub-cabinet

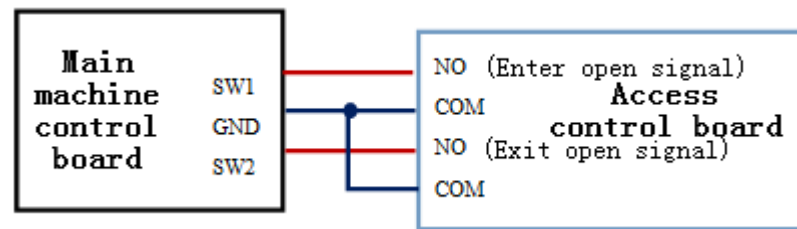


- Step 2 Connect the air switch to the power source, and make sure it is well grounded.
- Step 3 Connect the unlock signal wires.



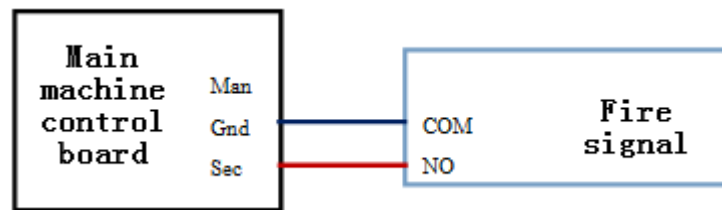
The main control board must not supply power for other access control devices.

Figure 2-3 Connect unlock signal wires



Step 4 Connect the fire signal wires.

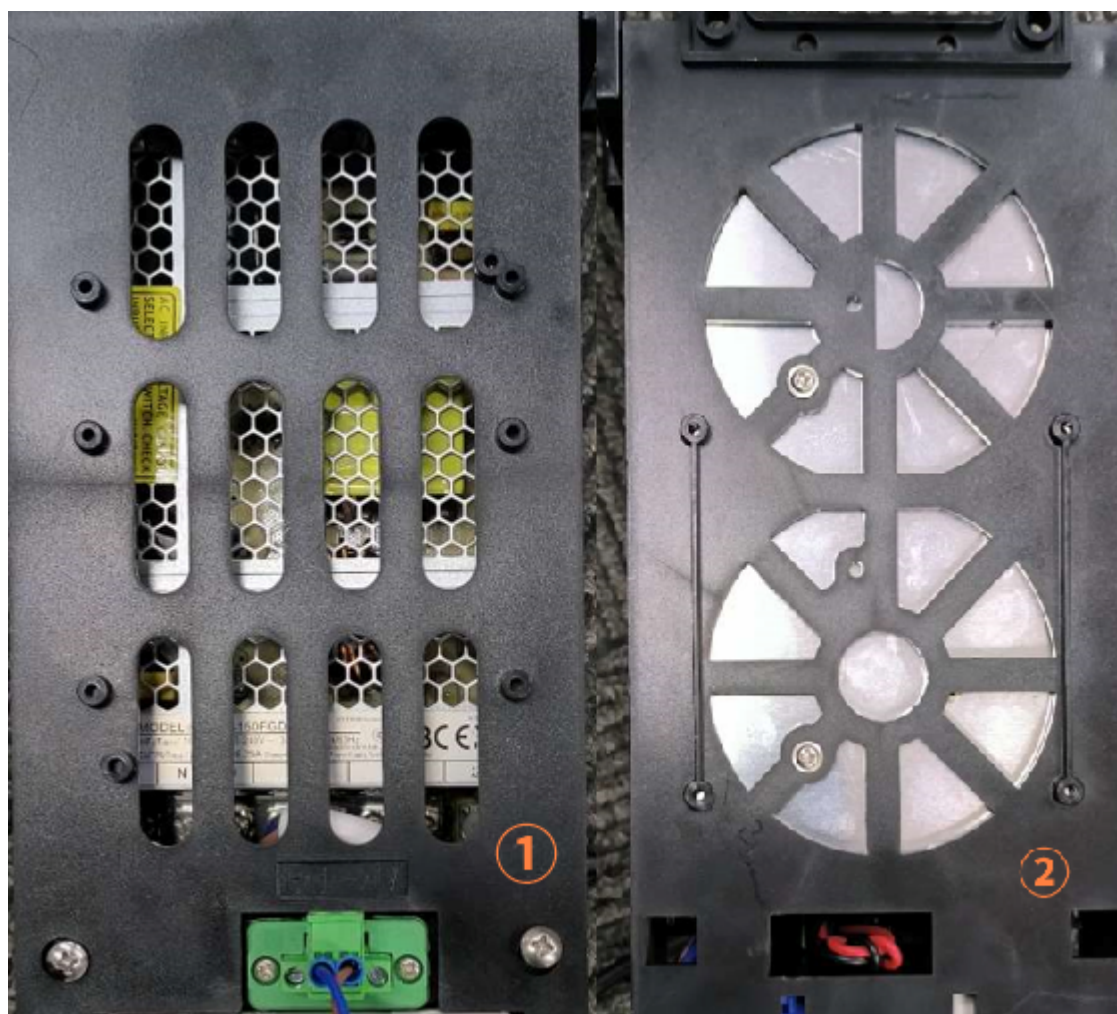
Figure 2-4 Figure 2-4 Connect unlock signal wires



If the input voltage of the device is AC 100 V to AC 120 V, do the following steps.

1. Unscrew and open the black top cover.
2. Unscrew the back of the power supply, and then take the power supply.

Figure 2-5 Take the power supply



3. Turn the red DIP switch on the left of the power adapter from **230 V** to **115 V**.

Figure 2-6 DIP switch



2.4 Debugging

Procedure

- Step 1** Before you power on the turnstile, check whether the interconnecting cables and the power lines are properly connected. If any faults occur during power-on, check the interconnecting cables first.
- Step 2** Functionality test: After power-on, the barrier arms will open and close, and over power try to open connection then open and close to perform power-on self-test. Do not block infrared sensors or stand in the lane during the self-test. The buzzer will sound twice after it is complete.
- Step 3** An alarm will be triggered if people attempt to pass through the turnstile without authorization. If no alarms are triggered, check whether the infrared sensors are aligned. Under normal circumstances, the infrared receiver is solid red, but if it turns yellow, it means the infrared receiver and infrared transmitter are not aligned.
- Step 4** The unlock time of access control relay can be set to 0–1 seconds.
- Step 5** The direction indicator will turn green for authorized passage. If the direction of the indicator is wrong or the barrier arms close when people approach the lane, switch wiring of SW1 Gnd, and SW2 Gnd.

Figure 2-7 Ports of control board

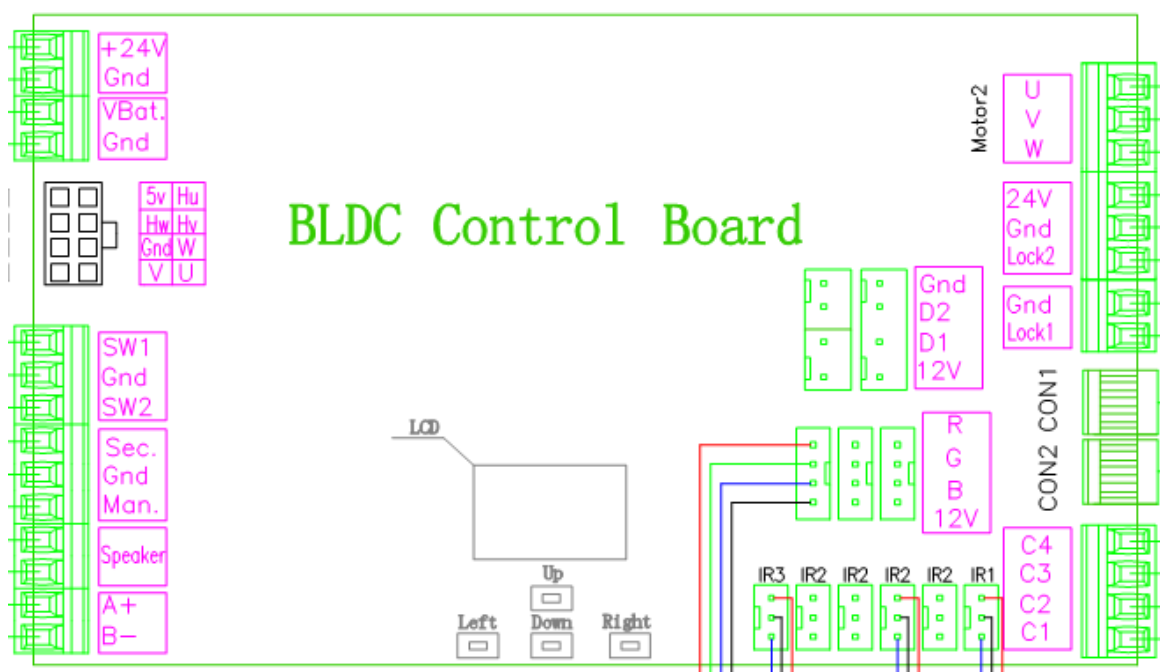


Table 2-1 Ports description

Parameters	Description			Notes
PWR IN	1	+24V	24 VDC power input port	Connect to 24 VDC power source.
	2	GND		

Parameters	Description			Notes
BAT IN	3	+24V	Spare 24 VDC power input port	Connect the 12 VDC storage battery. Automatically unlock when power off.
	4	GND		
Motor 1	5	W	Motor 1 output	Output voltage to motor and controls barrier arms
	6	V		
	7	U		
	8	GND	Motor hall sensor	—
	9	HW		
	10	HV		
	11	HU		
	12	+5V		
Enter SW1 Exit SW2	13	SW1	Entry unlock signal input	- Connect to NO-SW1 COM-Gnd. - Connect to NO-SW2 COM-Gnd.
	14	GND		
	15	SW2	Exit unlock signal input	
Sec Gnd Man	16	Sec	Normally open input	Connect [Sec Gnd] or [Man GND] for normally open and normally closed.
	17	Gnd	Normally open input	
	18	Man	Normally open input	
Speaker	19	+	Voice port	—
	20	-		
RS-485	21	A+	RS-485 communication	
	22	B-		
IR Sensor	23	IR1		The indicator of the receive infrared sensor lights up when the sensor is blocked.
	24	IR2*4		
	25	IR3		
	26	+12V	12 V power supply	—
	27	GND		
B G R +12V	28	+12V*3		Connect to LED bar
	29	B*3		

Parameters	Description			Notes
	30	G*3		
	31	R*3		
Card reader reserved port	32	C1	Reserved port of Card reader	—
	33	C2		
	34	C3		
	35	C4		
Indicator	36	+12V	D1, D2 for enter/exit direction signals	Connect to the indicator
	37	GND	D1, D2 for enter/exit direction signals	
	38	D1	D1, D2 for enter/exit direction signals	
	39	D2	D1, D2 for enter/exit direction signals	
CON	40	CON1	Communication connection between the main cabinet and the sub cabinet	Main/sub cabinet CON2–CON2
	41	CON2		
LOCK1	42	LOCK 1	Clutch signal output of main cabinet	—
	43	GND		
LOCK 2	44	LOCK 2	Clutch signal output of sub cabinet	
	45	GND		
	46	+24V		
Motor 2	47	W	Motor 2 output	
	48	V		
	49	U		

2.5 Configuring Parameters

Parameters were configured by default. Please change the parameters under technical guidance.

The displays have up, down, left and right buttons to navigate menu items. Long tap right button to enter the menu.

For example, if you want to configure bi-directional free pass, take the following steps.

1. Press the ENT key for 3 seconds to enter the menu.
2. Select **Parameter**, and then press the ENT key to enter the parameter menu.
3. Select **Gate Mode**, and then press ENT the key to enter the gate mode menu.
4. Select **Bi-directional Free Pass**, and then press the ENT key. The gate mode is configured as the bi-directional free pass, and the device automatically goes back to the parameter menu.
5. Press the ESC key for 2 times to go back to the home screen.

Table 2-2 Menu settings

Parameters	Description
Housing material	304 stainless steel
Input power	100 VAC–120 VAC / 200 VAC–240VAC
Passage Parameters	
Passage mode	Passage modes for entry and exit. Authorized entry and authorized exit (default).
Passage time	1.0 s–25.5 s (5 s by default)
Memory mode	After receiving the door opening signal N times, it can effectively pass through N people (there is no need to give another door opening signals).
Credential identification in the lane	People can stand in the lane and verify their identities. ● Disabled (by default). ● Enable.
Open delay time	After valid identity verification, the turnstile unlocks after a defined delay time (0.0 s–25.5 s). The default delay time is 0 s.
Close delay time	After people pass through the turnstile, the turnstile re-locks after a defined delay time (0.0 s–25.5 s). The default delay time is 0 s.
Intrusion alarm	● None. ● Alarm (default). ● Alarm and close.
Advanced parameters (Adv. Param)	Press and hold the down button and right button for 3 seconds to enter the advanced parameters menu. Found 22 single and double door settings (Barriers). ● Option 1): Double. ● Option 2): Single.
System Parameters	

Parameters	Description
Language	Language of the menu
Device type	The type of the device
Version	Version information of hardware and firmware
Reset	Reset settings to factory defaults
Restart	Restart the device
Functionality Tests	
Cycle test	Open and close cycle test
Home position	Set the barrier arms to home position.
Zero Position	Configure the closed position for the barrier.
Zero Position Setting:	1. Long press the right button for 3 seconds to enter the homepage. 2. Press the down button, and then right click to confirm to perform a functional test. 3. Press and hold the down button, and then click right button. 4. Start zero position setting, start setting, right-click manual door alignment, and then right-click to confirm setting. 5. Left-click to exit.

3 Trouble Shooting and Maintenance

3.1 Troubleshooting

The infrared sensor includes the transmit infrared sensor and the receive infrared sensor. The indicator at the end of the transmit infrared sensor is solid green. The receive infrared sensor has 3 wires: brown wire—12 V, blue wire--Gnd, and black wire--signal wire. The red indicator of the receive infrared sensor will light up when the sensor is blocked.

Question 1: Barrier arms open automatically when people walk in the lane without identity verification.

Answer: Change free passage mode to controlled passage mode.

Question 2: When people walk through the turnstile after valid identity verification, an alarm is triggered and barrier arms are closed automatically.

Answer: Unlock signal wires are connected incorrectly. Exchange the wiring of SW1 Gnd and SW2 Gnd.

Question 3: The indicator does not light up.

Answer: Check the indicator and the wiring.

Question 4: The barrier arm on one side does not rotate after valid identity verification.

Answer:

- Check whether the wiring came loose.
- Power off the turnstile, and then check whether the interconnecting cables between the main cabinet and sub-cabinet are wired properly.
- Measure whether the port W, V and U are correctly wired.

3.2 Maintenance

Perform regular maintenance to the turnstile to maintain its stability.



This product is a technically professional device. Do not disassemble it unless you perform regular maintenance.

- Keep the housing of the cabinets and card reader panels clean.
- Lubricate the barrier arms and remove rusts.
- Check the dust of the driver board and make it clean.
- Check the wiring and connectors and tighten the parts regularly.
- Clean the circuit board: power off the turnstile, and keep dust off the board.
- Lines Checking: Check the connecting lines and solder reinforcement if they are loose.

Appendix 1 Security Recommendation

Account Management

1. Use complex passwords

Please refer to the following suggestions to set passwords:

- The length should not be less than 8 characters;
- Include at least two types of characters: upper and lower case letters, numbers and symbols;
- Do not contain the account name or the account name in reverse order;
- Do not use continuous characters, such as 123, abc, etc.;
- Do not use repeating characters, such as 111, aaa, etc.

2. Change passwords periodically

It is recommended to periodically change the device password to reduce the risk of being guessed or cracked.

3. Allocate accounts and permissions appropriately

Appropriately add users based on service and management requirements and assign minimum permission sets to users.

4. Enable account logout function

The account logout function is enabled by default. You are advised to keep it enabled to protect account security. After multiple failed password attempts, the corresponding account and source IP address will be locked.

5. Set and update password reset information in a timely manner

The device supports password reset function. To reduce the risk of this function being used by threat actors, if there is any change in the information, please modify it in time. When setting security questions, it is recommended not to use easily guessed answers.

Service Configuration

1. Enable HTTPS

It is recommended that you enable HTTPS to access web services through secure channels.

2. Encrypted transmission of audio and video

If your audio and video data contents are very important or sensitive, it is recommended to use encrypted transmission function in order to reduce the risk of your audio and video data being eavesdropped during transmission.

3. Turn off non-essential services and use safe mode

If not needed, it is recommended to turn off some services such as SSH, SNMP, SMTP, UPnP, AP hotspot etc., to reduce the attack surfaces.

If necessary, it is highly recommended to choose safe modes, including but not limited to the following services:

- SNMP: Choose SNMP v3, and set up strong encryption and authentication passwords.
- SMTP: Choose TLS to access mailbox server.
- FTP: Choose SFTP, and set up complex passwords.
- AP hotspot: Choose WPA2-PSK encryption mode, and set up complex passwords.

4. Change HTTP and other default service ports

It is recommended that you change the default port of HTTP and other services to any port between 1024 and 65535 to reduce the risk of being guessed by threat actors.

Network Configuration

1. **Enable Allowlist**

It is recommended that you turn on the allowlist function, and only allow IP in the allowlist to access the device. Therefore, please be sure to add your computer IP address and supporting device IP address to the allowlist.

2. **MAC address binding**

It is recommended that you bind the IP address of the gateway to the MAC address on the device to reduce the risk of ARP spoofing.

3. **Build a secure network environment**

In order to better ensure the security of devices and reduce potential cyber risks, the following are recommended:

- Disable the port mapping function of the router to avoid direct access to the intranet devices from external network;
- According to the actual network needs, partition the network: if there is no communication demand between the two subnets, it is recommended to use VLAN, gateway and other methods to partition the network to achieve network isolation;
- Establish 802.1x access authentication system to reduce the risk of illegal terminal access to the private network.

Security Auditing

1. **Check online users**

It is recommended to check online users regularly to identify illegal users.

2. **Check device log**

By viewing logs, you can learn about the IP addresses that attempt to log in to the device and key operations of the logged users.

3. **Configure network log**

Due to the limited storage capacity of devices, the stored log is limited. If you need to save the log for a long time, it is recommended to enable the network log function to ensure that the critical logs are synchronized to the network log server for tracing.

Software Security

1. **Update firmware in time**

According to the industry standard operating specifications, the firmware of devices needs to be updated to the latest version in time in order to ensure that the device has the latest functions and security. If the device is connected to the public network, it is recommended to enable the online upgrade automatic detection function, so as to obtain the firmware update information released by the manufacturer in a timely manner.

2. **Update client software in time**

It is recommended to download and use the latest client software.

Physical Protection

It is recommended that you carry out physical protection for devices (especially storage devices), such as placing the device in a dedicated machine room and cabinet, and having access control

and key management in place to prevent unauthorized personnel from damaging hardware and other peripheral equipment (e.g. USB flash disk, serial port).