



Pedestrian Gate User Manual

Flap& Swing barrier






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Preface

Symbol definition

There may be the following symbols in this document, and their meanings are as follows.

 DANGER	Indicates that there is a high degree of potential hazard, if it cannot be avoided, it will cause casualties or serious injuries
 WARNING	There is a medium or low potential hazard. If it cannot be avoided, it may cause minor or moderate injury to personnel.
 NOTICE	There is a medium or low potential hazard. If it cannot be avoided, it may cause minor or moderate injury to personnel.
 TIPS	Help you solve a problem or save your time.
 README	The additional information in the main text is to emphasize and supplement the main text.

Safety instructions

The following is about the correct use of the product, in order to prevent danger, prevent property damage, etc. Please read this manual carefully before using the equipment and strictly follow it when using it. Please keep the manual properly after reading.



WARNING

- Pregnant women, children, and the elderly must pass under supervision.
- Children under 1 meter in height must be carried (or side by side) by an adult.
- Passers are forbidden to stay or play deliberately in the passage.
- When pulling luggage to pass, please ensure that the luggage is passed in front or side by side.
- When turnstile uses the "One by one" mode (Turnstile uses the "One by one" mode by default), please pass quickly, and do not follow, stay, break into, or go retrograde. If you don't use turnstile according to the above requirements, it may appear Injury accident.
- Swing violent impact will accelerate the risk of damage to the movement and shorten the service life of turnstile, and in severe cases will make turnstile unusable.
- Ensure that the ground wire of the system is reliably connected to prevent personal injury.
- Do not use the machine when there is lightning, so as not to damage the machine.



NOTICE

- After the equipment is installed, tear off the protective film, remove the stains during the installation, and clean the body of the equipment.
- The whole equipment must be maintained regularly to avoid rust on the surface and ensure the normal operation of the equipment.
- Surface stainless steel needs to increase the frequency of maintenance in some applications, such as swimming pool entrances, close to the sea (generally within 50km), serious industrial pollution, construction sites and other places with bad atmospheric conditions.
- Do not use paint thinner or any organic reagents during maintenance.
- When using a device with a face/fingerprint recognition component, the fixing hole of the face/fingerprint recognition component must be glued.

Operating requirement

- Do not disassemble the device at will.
- Do not place and install the device in direct sunlight or near heating devices.
- Do not install the device in a humid, dusty or soot place.
- Please keep the equipment horizontally installed, or install the equipment in a stable place, taking care to prevent the product from falling.
- Do not drip or splash liquid on the device, and make sure that no objects filled with liquid are placed on the device to prevent liquid from flowing into the device.
- Please install the device in a well-ventilated place, and do not block the vents of the device.
- The device can only be used within the rated input and output range.
- Please transport, use, and store the device within the allowable humidity and temperature range.

Power requirement

- The product must use the wire assembly (power cord) recommended in this area and use it within its rated specifications!
- Please be sure to use the standard power adapter of the equipment, otherwise the personnel injury or equipment damage caused will be borne by the user.
- Please use a power supply that meets the requirements of SELV (Safety Extra Low Voltage) and the rated voltage of the Limited Power Source in accordance with IEC62368-1. The specific power supply requirements are subject to the equipment label.
- Please connect the product of Class I structure to the grid power output socket with protective ground connection.
- The appliance coupler is a disconnect device. Please keep it at an angle that is convenient for operation during normal use.

Precautions for use

- When authorized to pass turnstile, there should be no one in the opening direction of the channel, otherwise the channel will not be open after authorization, and the channel will only be opened after the person in the opening direction exits.
- Pass the channel as soon as possible after authorization. If the pedestrian does not enter the channel timeout, the system will automatically close Swing.
- For multi-pedestrian pass, the pass will be successively authorized when the memory mode is enable, but the time interval between successive authorizations is recommended to be 2 seconds to 5 seconds.
- When authorizing, pay attention to the display status of the access indicator. Green means authorization is successful and passage is allowed; red means authorization fails and passage is prohibited.
- When the retrograde alarm and close gate function is enable, after the entrance direction is authorized, the exit direction is forbidden to enter. If the exit direction enters, the system will close the channel, which may cause injury to pedestrian.
- Please keep the authorization card in a safe place to avoid damage to the authorization card, which may cause card swipe failure.
- Do not use turnstile channel to move goods through, avoid system misjudgment as illegal entry.
- One by one is required when using turnstile, and pass as soon as possible within the valid time. It is not allowed to stay, play, or enter the turnstile channel in the opposite direction to avoid injury accidents.

Chapter 1 Product introduction

1.1 Brief introduction

It is suitable for pedestrian passage management, such as stations, BRT, office buildings, apartments, tourist attractions and other entrance and exit control usage scenarios, and can realize general dissuade-level access control of public passages. When the equipment is powered off, the swing is in an open state to ensure that pedestrians can pass freely; when the equipment is powered on, the swing automatically resets.

1.2 Description

This turnstile gate including a serials version, please refer to table 1-1

Table 1-1 configuration description

Configuration	Basic version	RFID access control	Face recognition (one-way)	Face recognition (bi-direction)
Card reader(bi-direction)	x	√	x	x
Access controller(bi-direction control)	x	√	x	x
Face recognition(one-way control)	x	x	√	x
Face recognition(bi-direction control)	x	x	x	√

1.3 Features

- ◆ Automatically open while power failure
- ◆ Automatically close while time out
- ◆ IR detect and intelligent alarm
 - Trailing alarm
 - Illegal enter alarm
 - Retrograde alarm
 - Pinch protection detect
- ◆ Pass request memory function

1.4 Traffic mode

Turnstile can set the traffic mode according to the direction of pedestrian control.

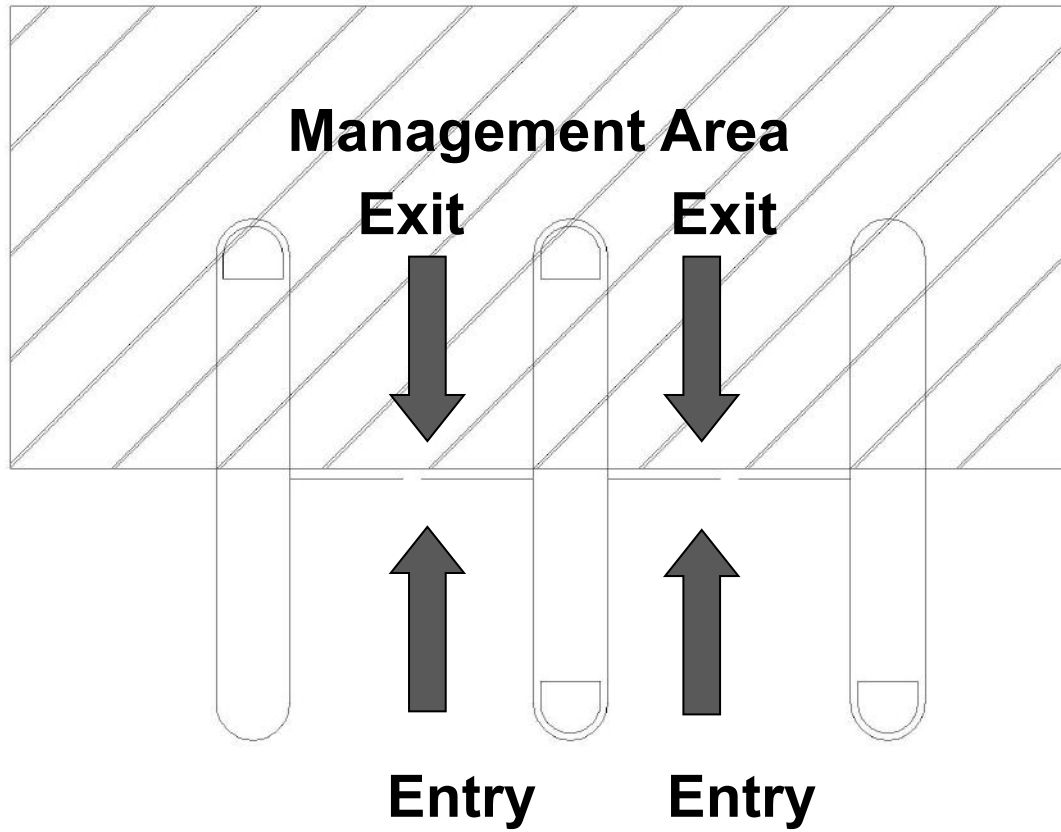
Authorization pass: The pedestrian is allowed to pass after RFID/face authorization.

Free pass: pedestrian enters the pass area and triggers the IR sensor to automatically open swing without authorization.



README

- **Entry:** According to the pass direction, enter the control area from outside the management area.
- **Exit:** According to the pass direction, leave the management area to outside the control area.

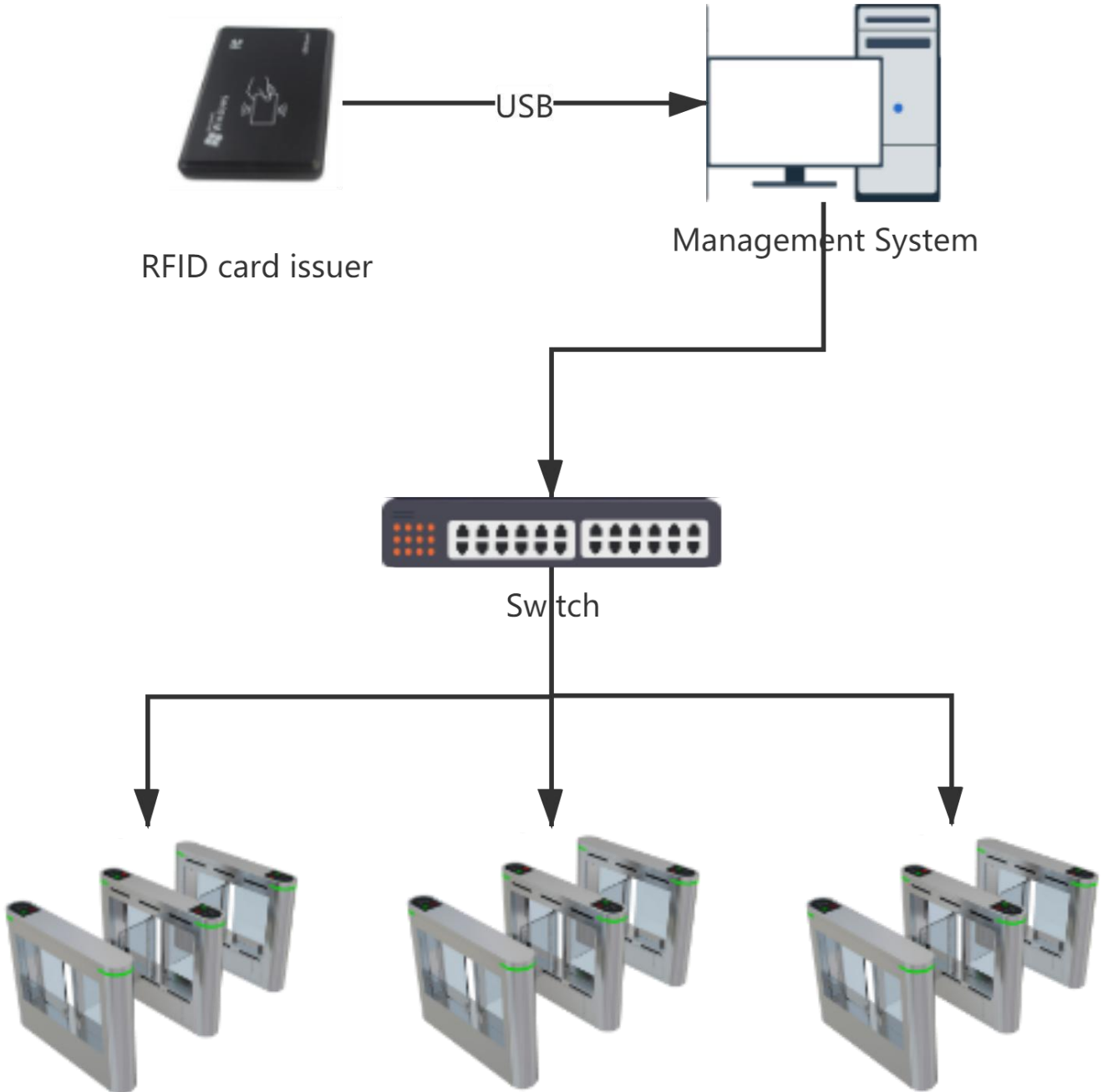


According to the two pass directions, four traffic mode combinations can be set:

- Authorized entry, authorized exit
- Authorized entry, exit freedom
- Entry freedom, exit authorized
- Entry freedom, exit freedom

Chapter 2 System topology

Management system records the RFID card or face library by collecting equipment or batch import, and synchronizes the authorization information to each turnstile to realize the management and control of the channel.



Chapter 3 Product structure

3.1 Appearance structure

3.1.1 Appearance

According to appearance classification: left gate, middle gate, right gate;

According to the drive core classification: single core, double core.

Single channel system consists of left and right gates

Multi channels system consists of left, multi middle and right gates.

Left gate	Middle gate	Right gate	left gate	Middle gate	Right gate
Single core	Double core	Single core	Single core	Double core	Single core

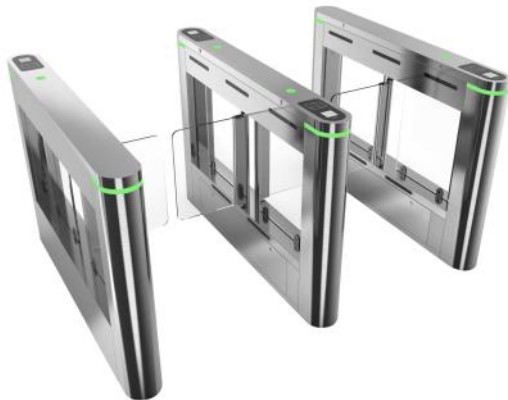


Figure 3-1 Appearance(1)



Figure 3-2 Appearance(2)

3.1.2 Dimension

The dimension of the product refers to the actual model of the order.

3.2 Main components

Table 3-1 components description

Item	Description
LED Indicator	<ul style="list-style-type: none"> ◆ When the passage is not authorized, the status is red; ◆ After receiving the authorization signal, it turns to green, allowing passage.
Drive unit control board	Turnstile sensor detection, traffic detection, alarm output, motor control.
Access controller	<p>After the judgment, the open signal is output to the turnstile drive board, which drives the motor to turn on the swing.</p> <p> README Only products configured in RFID access control have this components.</p>
IR sensor	Collect pedestrian location information.
Swing	<ul style="list-style-type: none"> ◆ When it is opened, it become a passing channel; ◆ When it is closed, it become a block.
Motor	Drive swing open and close.
Clutch	<p>When swing is violently hit, buffer the impact and lock the swing.</p> <p> README Only some devices have this function, please refer to the actual product parameters ordered.</p>
Power supply	The power converter converts 110V/220V AC input voltage into 24V DC power output.
Air switch	Close and open the circuit. Short circuit, overload or low voltage protection.
Speaker	Voice prompt output.

Chapter 4 Installation

This chapter mainly introduces turnstile's installation requirements, preparations, installation tools and installation process.

4.1 Installation precautions



WARNING

- During installation, construction must be carried out in strict accordance with the requirements of the installation drawings. We will not be responsible for the loss of personnel and property caused by non-compliant construction.
- Incorrect installation or use can cause serious harm to people or objects.
- Safety devices and control equipment that comply with EN12978 must be used.
- During installation, wiring, disassembly and other operations, please be sure to disconnect the power supply of the equipment, and do not operate with power.
- Turnstile gate is composed of a variety of mechanical and electrical components. Any negligence during construction will seriously threaten your personal safety.
- If the turnstile gate emits smoke, produces a peculiar smell, or makes noise, please turn off the power immediately and unplug the power cord, and contact the dealer or service center in time.
- Please be extra careful when handling internal components that are charged or may cause movement.
- Do not disassemble the outer cover under unnecessary circumstances to avoid loss of personnel and property.



NOTICE

- When installing this product, please fix the device firmly.
- When connecting to 220 V mains, the ground wire introduced must be effectively grounded.
- Before the equipment is running, it must be ensured that the user or operator can fully observe its status.
- After the device is powered on, it is strictly forbidden to stand in the channel to operate the device.

4.2 Preparation before installation

- The ground where the equipment is to be installed must be leveled.
- For use in a humid and water-prone environment, a cement base of 100mm or more must be built (depending on the height of the water accumulation). At the same time, the channel needs to be heightened simultaneously to avoid affecting the use of the equipment. The gap between the cement base and Turnstile needs to be sealed with silica gel for waterproof and anti-condensation measures.
- The depth of the buried PVC line pipe should be greater than 150 mm, the height of the exposed ground should be greater than 50 mm, and the outlet should be bent back to prevent the line pipe from entering water. Please keep the floor of the product installation area dry during daily use.
- Clean up the installation site.
- Confirm the installation location of the equipment according to the channel width and the corresponding plan size drawing of the installation, please refer to the drawing attached to the order.

4.2.1 Tools preparation

Please note that the tools used in different installation environments will be different during installation.

- Cement hard floor
Hammer drill, No. 16 drill bit, marker pen, tape measure, spirit level, wire cone (used to calibrate the level of multiple channels), hammer, wrench, angle grinder or cutter, screwdriver.
- Marble, tile floor
Because marble and ceramic tiles are relatively brittle, it is easy to break them directly with a percussion drill. To make a hole, you need to use a hand drill to make a small hole, and then add cooling water for drilling to make a small round hole. Finally, insert the hole into the hole. The powder is rinsed dry with water, and the holes are drilled to the corresponding size.

4.2.2 Cable layout

Before installation, pipe wiring is required. The pipelines that need to be embedded include power lines, signal lines, and communication lines. The specific pipe wiring requirements are shown in Figure 4-2.

- Before installation, check whether the identification of the wiring is clear, and make the wire mark.
- Check whether the AC power input line, communication line, and signal line in the PVC pipe are separated (strong and weak currents are not allowed to be in the same pipe).
- The pre-embedded depth of the PVC pipe should not be less than 150 mm to avoid damage to the cable when drilling expansion screw holes. The height of the exposed ground should be greater than 50 mm to prevent water from entering the pipe.
- Please note that the embedded PVC line pipe must be able to pass through the threading hole of the installation base.

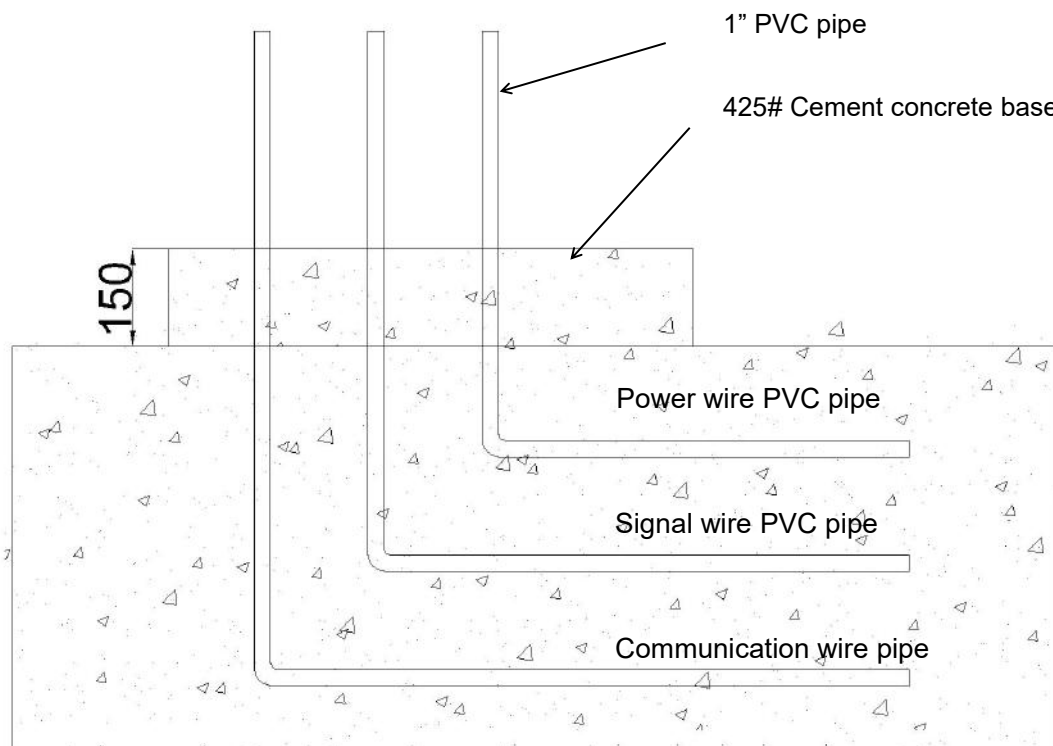


Figure 4-2 Pipe schematic

The quantity of wires and the wire holes that need to be passed are shown in Figure 4-3 and 4-4. For details, see Table 4-1.

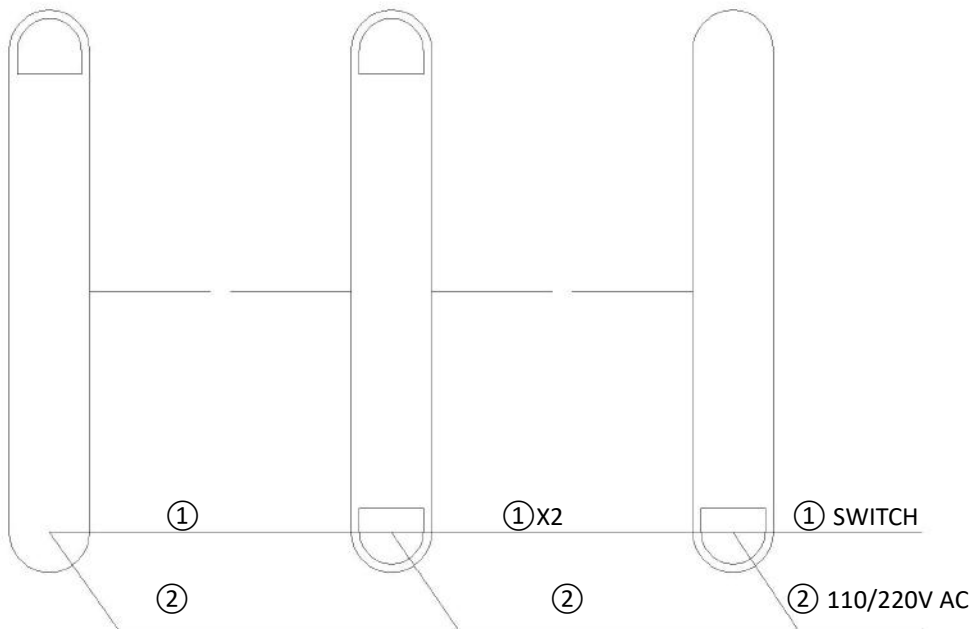


Figure 4-3 Schematic of bi-direction face recognition wiring

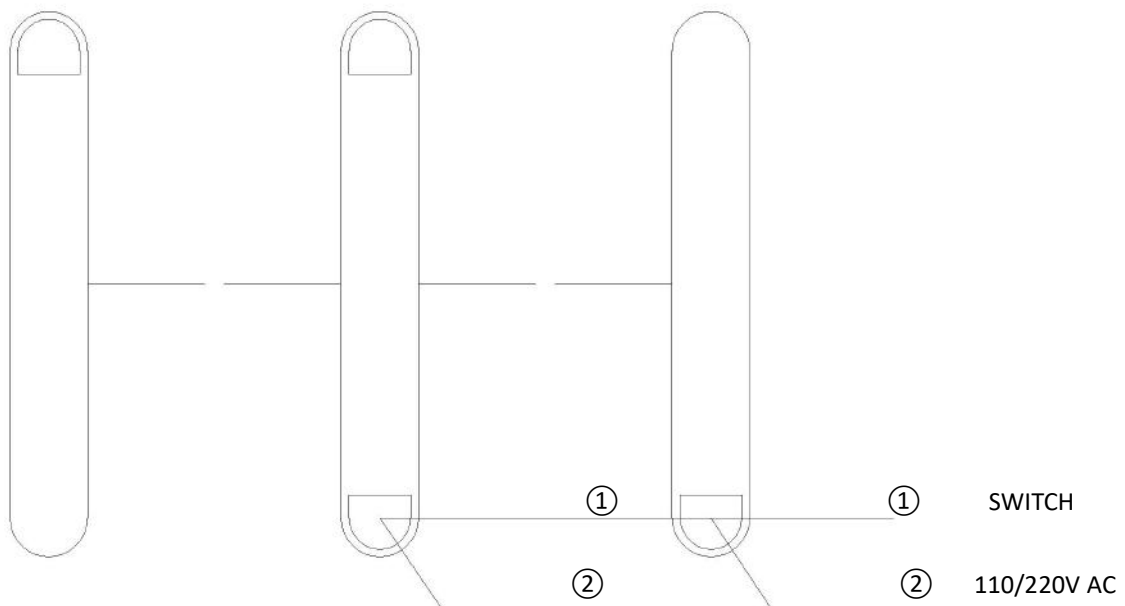


Figure 4-4 Schematic of one-way face recognition or bi-direction RFID wiring

Table 4-4 Cable layout description

No.	Cable	Description
1	Network cable*1 (CAT5) TIPS Reserve 3 meters after exiting the wire hole	<ul style="list-style-type: none"> ◆ Bi-direction RFID and One-way face recognition, deploy 1 network cable; ◆ Bi-direction face recognition, middle gate deploy 2 network cable, side gate deploy 1 network cable,
2	Power cable*2 (RVV3*2.5) TIPS Reserve 3 meters after exiting the wire hole	<ul style="list-style-type: none"> ◆ One-way face recognition or bi-direction RFID turnstile, each middle gate and side gate deploy 1 220V/110V AC power cable(RVV3*2.5); ◆ Bi-direction face recognition turnstile, left gate with one more 220V/110V AC(RVV3*2.5).

4.2.3 Cable layout diagram

Turnstile installation wiring path is shown in Figure 4-5. It is strictly forbidden to arrange pipes and wiring according to Figure 4-6 wrong installation wiring path diagram, otherwise the Turnstile will not be fixed firmly, which will affect the reliability of Turnstile operation and even the installation of expansion screw holes will penetrate the wires.

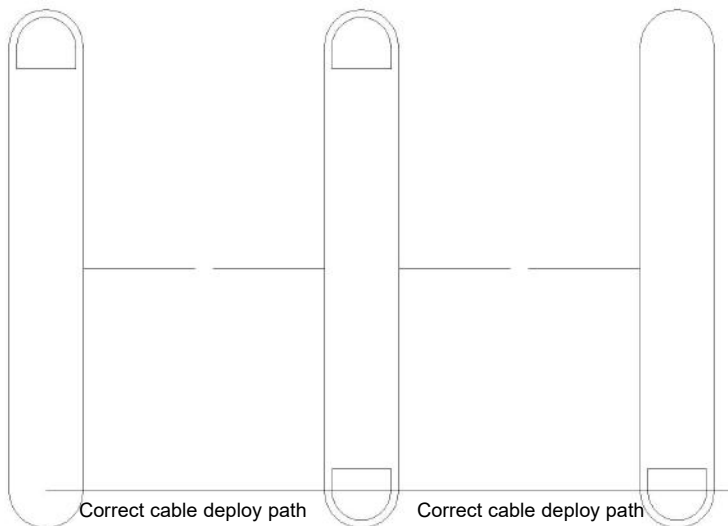


Figure 4-5 Correct cable deploy path

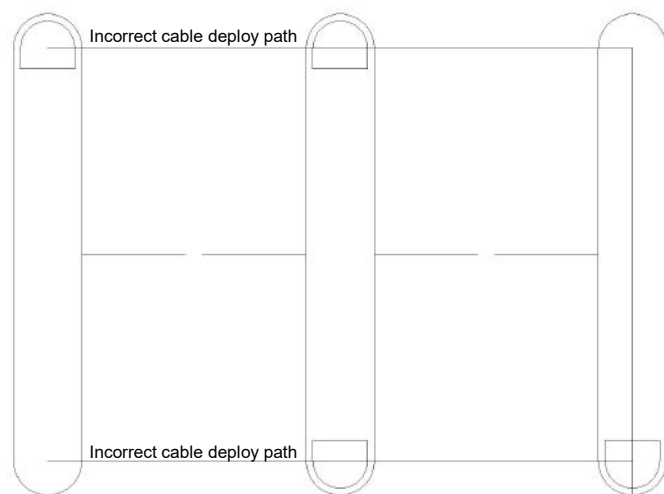


Figure 4-6 Incorrect cable deploy path

4.3 Construction

4.3.1 Drilling

Before installing the device, you need to pay attention to the distance between the device and the fixed building size, as shown in Figure 4-7.

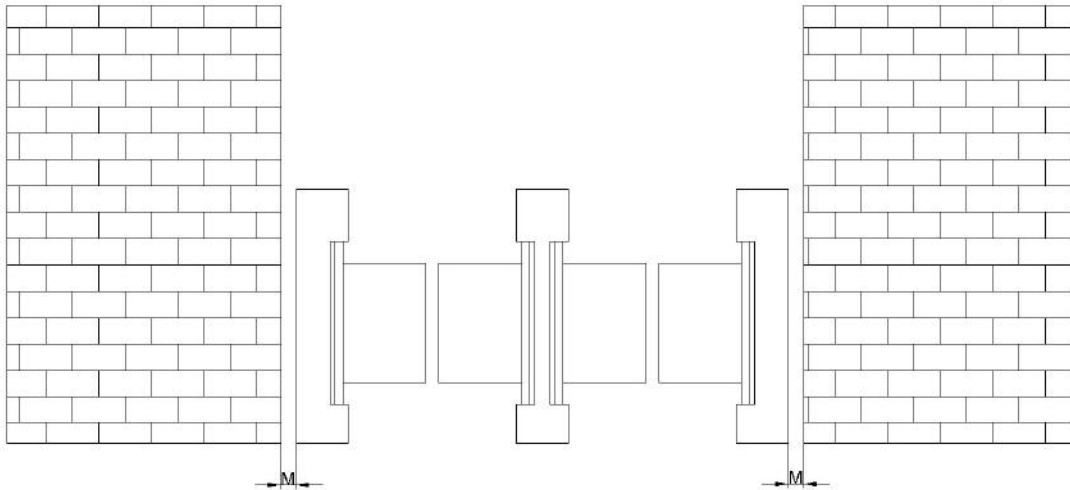


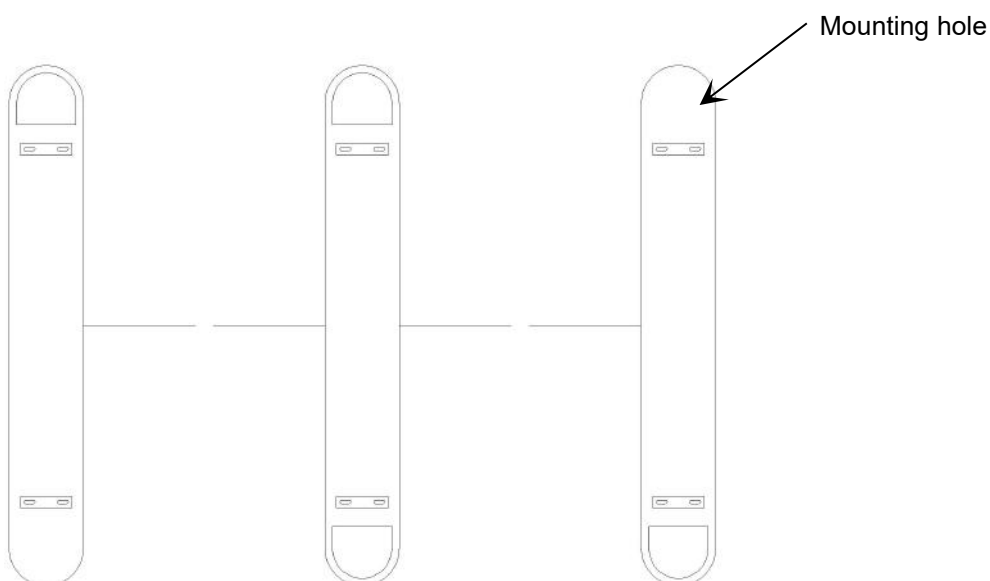
Figure 4-7 Install close to fixed buildings



README

- All machines must be placed in the same direction as indicated by the label on the outside or inside of the top cover of the equipment, and they must be arranged in order from left to right.
- The fixed building gap M close to the equipment is guaranteed to be no less than 60mm, which can be adjusted appropriately according to the site environment, generally no more than 100mm. So that the upper cover can be opened during installation and maintenance, while preventing pedestrians from passing through here.

Step 1 Determine the 4 mounting holes for each device and draw them with a marker.



Step 2 According to the requirements of the engineering design, drill holes at the positions determined on the base material (such as concrete). See Table 4-2 for the hole diameter, hole depth and bolt diameter requirements.

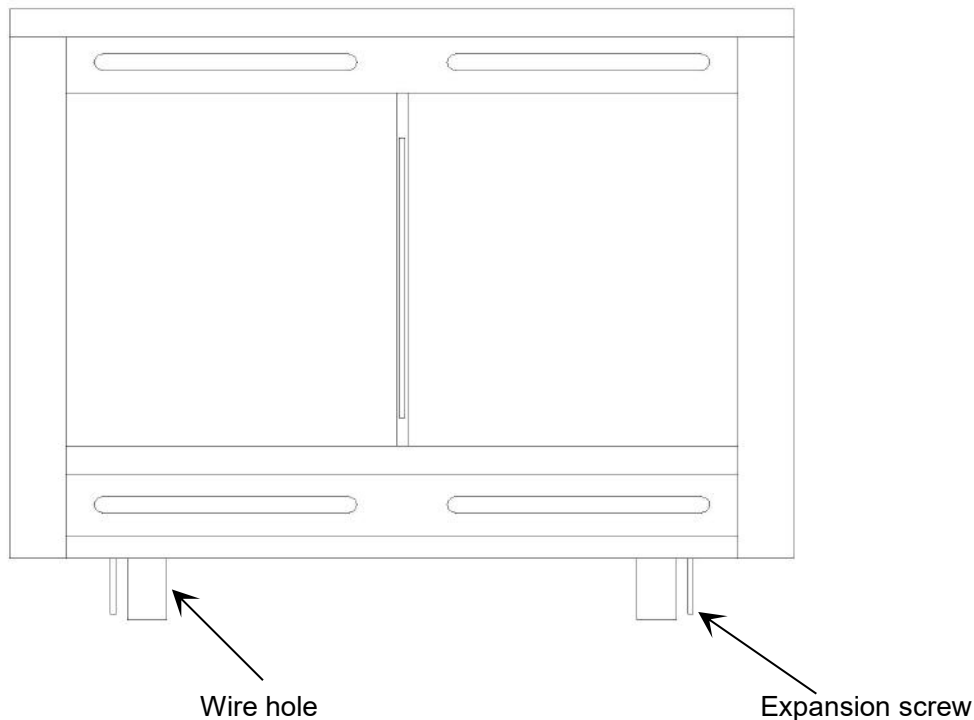
Table 4-2 Expansion bolt specifications

Parameter	Dimension
Bolt specification	M12*100
Drilling depth (mm)	75
Drilling diameter (mm)	16

- Step 3** The compressed air blows out the dust and repeats this no less than 3 times to clean the holes.
- Step 4** Use a hammer to force the screw rod and insert it to the bottom of the hole
- Step 5** Tighten the nut with a wrench, tighten the bolt, and hit it to the bottom of the hole with a hammer.

4.3.2 Adjust equipment horizontal

- Step 1** Use the key open top cover and side doors.
- Step 2** Insert the cables reserved during the wiring into the cable hole of the device, and organize the cables to prevent the cables from being squeezed or damaged.



- Step 3** Lift the device carefully, adjust the position carefully, align the installation holes of the device with the expansion bolts, and gently place it on the installation surface.
- Step 4** Preliminarily adjust the equipment with gaskets to ensure horizontal placement.
- Step 5** On the installation position of each equipment, select 3 points evenly along the longitudinal or transverse direction of the equipment, and measure the slope of the ground where the equipment is installed with a level.
- Step 6** Repeat steps 1~5 to install other devices to form a set of channels.

README

- All machines must be placed in the same direction as indicated by the label on the outside or inside of the top cover of the equipment, and they must be arranged in order from left to right.
- In addition to the above installation requirements, each device needs to ensure the levelness, verticality and deviation between each device, as shown in Figure 4-11, 4-12.

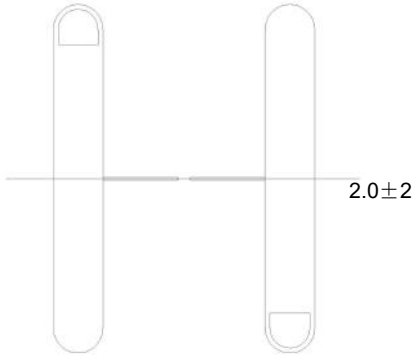


Figure 4-11 Alignment deviation (unit: mm)

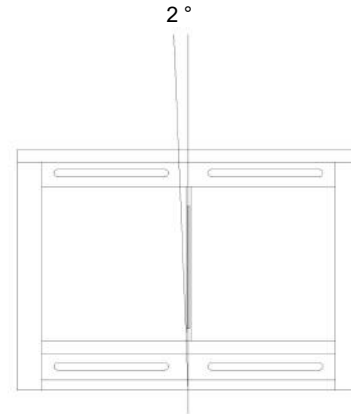


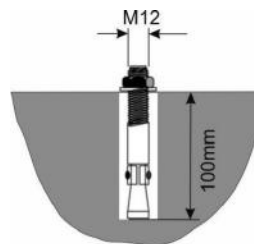
Figure 4-12 Vertical deviation

4.3.3 Fix the device

Step 1 After the equipment is adjusted, put the flat washer, spring washer and nut on the bolt, and tighten the nut by hand, as shown in Figure 4-13.

Step 2 Use a wrench to tighten all nuts.

Step 3 After fixing, seal the gap between the equipment and the floor with silica gel to prevent water from entering.



*Setscrews Install

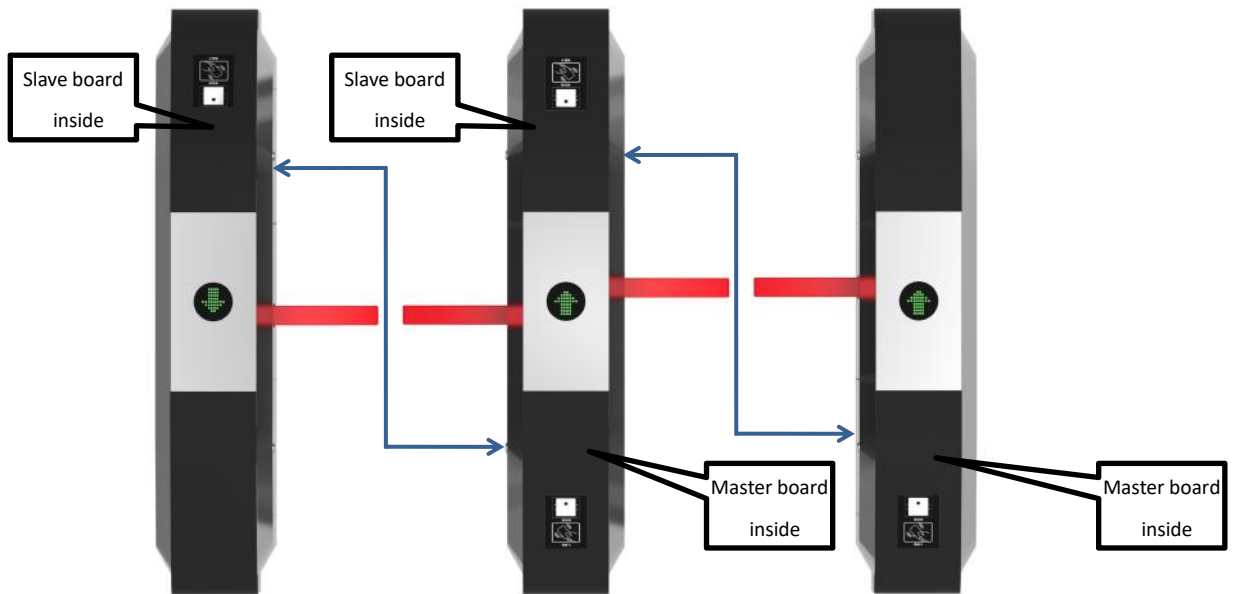
Figure 4-12

Chapter 5 Wiring

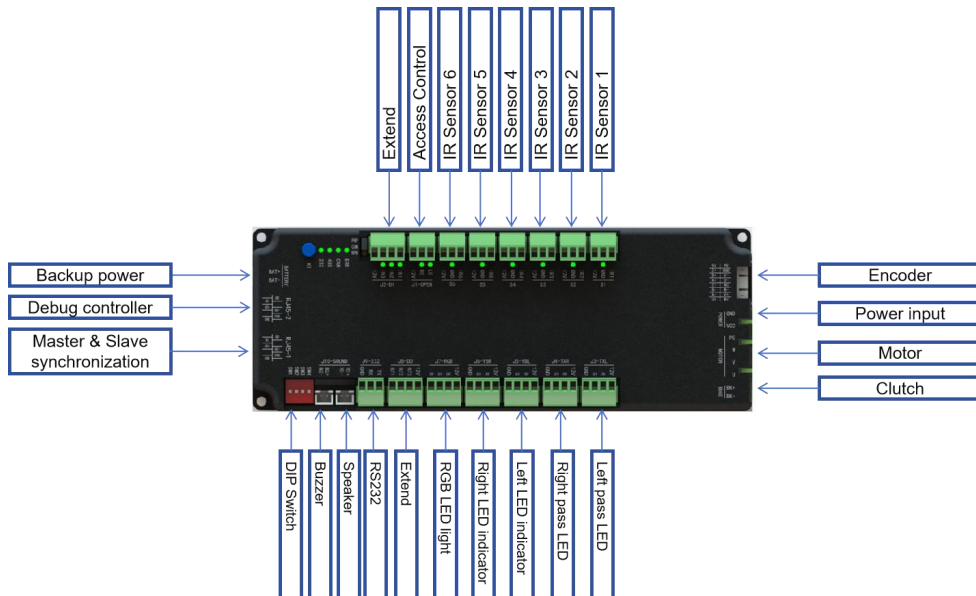
5.1 Master & slave device drive board wiring

README

The master machine drive board is in the chassis on the right side of the entrance, and the slave machine drive board is in the chassis on the left side of the entrance; the middle gate contains a master machine drive board and a slave machine drive board.

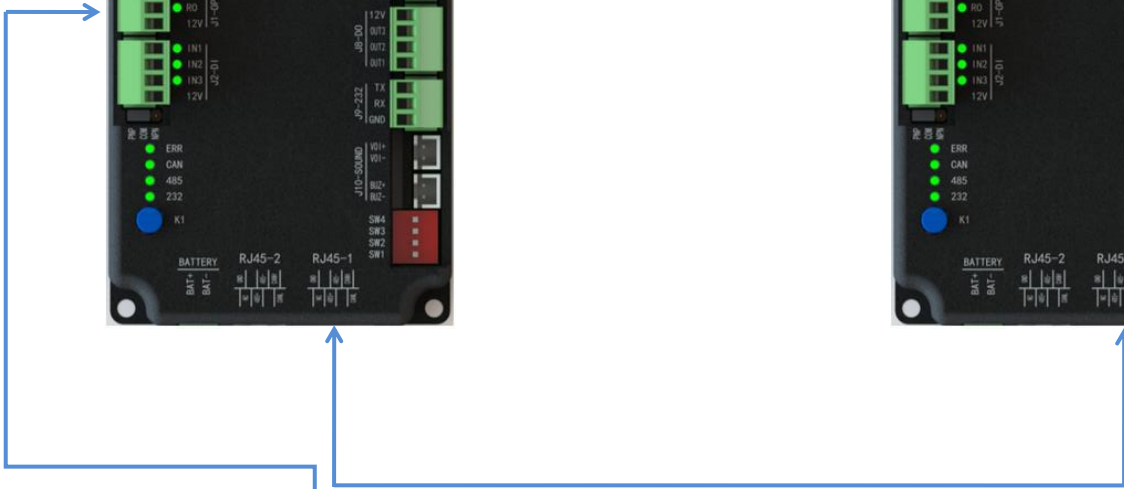
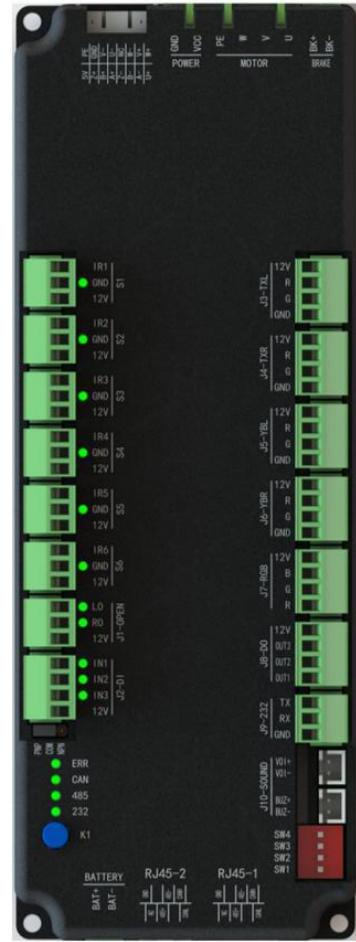
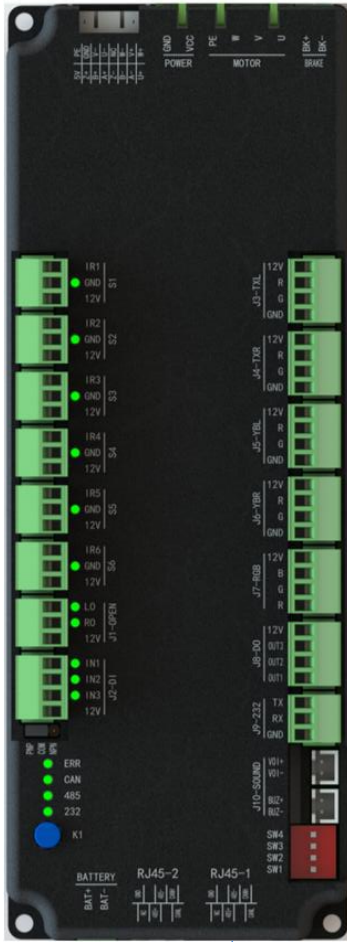


Drive board wiring



Master Board

Slave Board



Unlock Signal Output
(NO, COM)
Access Controller



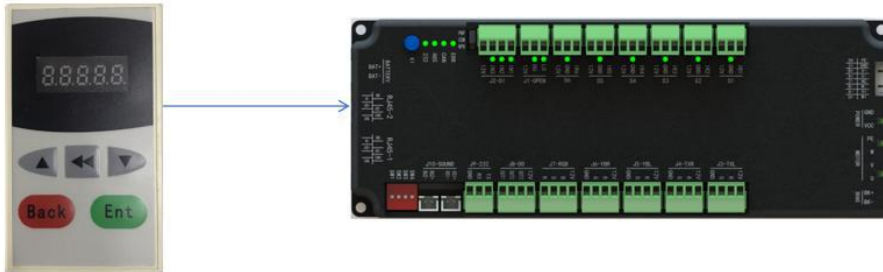
NOTICE

It is forbidden to draw power from the turnstile controller to other equipment without permission. Damage to the controller caused by this is not covered by the warranty.

Chapter 6 Menu setting and debug

6.1 Drive board operation

- 1) Insert the debug controller into the RJ45-2 interface of the master board for testing and parameter adjustment.



- 2) Instructions for using debug controller.

Debug Controller	Icon	Name	备注
		Display	Digital tube display area
		Increase	Increase serial number or value
		Minus	Decrease sequence number or value
		Displacement	Move the editable digital tube display bit to the left (can be circularly shifted)
		Back	Menu exit/cancel operation
		Confirm	Menu entry/execution operation

- 3) Menu Description

The main menu of the digital keypad is divided into 4 blocks: parameter monitoring (d-), parameter setting (PA-), auxiliary functions (A-) and connection switching (L-).

The following is a comparison table of the corresponding functions of each menu:

Digital tube display	Info	Remark
	Parameter monitor	Can monitor various operating parameters of the gate and check the software version
	Parameter setting	Set various operating parameters of the gate
	Accessibility	Gate control such as: opening and closing, aging, etc.
	connection switching	Set the connection end of the key board: master + slave, master, slave

6.2 Drive board parameter description

Table 6-2 Parameter description

Menu	Option	Remark
PA1-00	Working Mode	Setting: Default is 1 Range: 0 - Aging Mode 1 - Bidirectional Authorized Passage 2 - Bidirectional Free Passage 3 - Bidirectional Prohibited Passage 4 - Authorized Passage Inbound + Free Passage Outbound 5 - Authorized Passage Inbound + Prohibited Passage Outbound 6 - Free Passage Inbound + Authorized Passage Outbound 7 - Free Passage Inbound + Prohibited Passage Outbound 8 - Prohibited Passage Inbound + Free Passage Outbound 9 - Prohibited Passage Inbound + Authorized Passage Outbound 10 - Reserved
PA1-01	Legal signal timeout setting	Setting value: 100 corresponds to 10 seconds Range value: Default 150
PA1-02	Gate closure delay time	Setting value: Default is 0 Range value: Generally not set
PA1-05	Volume	Setting value: Default is maximum volume Range value: 0 ~ 30



NOTICE

Some menus in the drive board are not listed in the above list, and it is forbidden to change the settings.

6.3 Power on and test

- Check whether the various parts of the equipment are normal (the equipment has been fully tested before leaving the factory, and the status of the equipment may be affected during transportation or installation).
- Check whether each connection is loose.
- Check whether the synchronization line of the device is firmly connected, and pay special attention to whether the synchronization line of the middle gate is connected incorrectly.
- After the above steps are confirmed to be correct, power on. After power on, the device will perform a power-on self-test. During the self-test, the swing will swing. After the swing is completed, the device starts successfully.
- Set the device traffic mode to "free entry, free exit", when people enter the pass area, swing will automatically turn on, and they will automatically close after passing; if you enter the pass area again in the opposite direction, swing will automatically turn on, and Swing will automatically close after passing. . During swing opening and closing, observe the status of swing in place.
- Set the traffic mode to the target traffic mode after synchronizing the swipe card or face authority.

6.4 Self-check after power on

Each time the device is powered off and restarted, the door opening and closing stroke self-test is required. Each swing performs two full-stroke self-tests. After the self-test, the swing will automatically adjust to the stroke center position and the device is in the closed state. At this time, the device enters the normal working state.



NOTICE

During the self-checking process of the equipment, it is not allowed to pass, not to block infrared rays, and not to block the swing of swing.

6.5 Troubleshooting

Q1	Does not open the door after swipe card.
A1	a. If the direction indicator of the led indicator is a red "X":
	a-1. Check the door unlock signal connection.
	a-2. Check the user authorization of the access control system.
	a-3. Check whether the master controller is powered on and whether the fuse is normal.
	b. If the direction indicator is a sign of a green arrow:
	b-1. Check the wire connection of the motor;
	b-2. After swiping the card, touch the tail of the motor with your hand to feel if the motor is running(Y/N).
	b-2-Y: The connection cable of the motor is reversed. Please change the positive and negative poles of the motor connection cable for connection test.
b-2-N: Please use a 24V / DC power supply to directly connect the motor and test whether the motor is running(Y/N).	
b-2-N-Y: The motherboard is damaged. Replace the motherboard.	
b-2-N-N: motor damaged, replace the motor.	
Q2	Turnstile has the function of automatic opening when power is off, but the door will not open when power is off.
A2	There is a super capacitor in the turnstile as a backup battery. Please use a multimeter to measure whether the BAT + and BAT- interfaces of the master controller have a voltage of 9V / DC or more.
Q3	After swipe the card, the door on one side opens and the other side does not open.
A3	a. Check the connection of the sync signal cable.
	b. Check the motor cable of the motherboard on the side that does not open the door.
Q4	Don't close after passing.
A4	Check the people detect ir sensor in the middle of the device is correct. If it is not correct, the LCD display on the motherboard will give an error prompt.
Q5	After turning on the power, the swinging position of the swing is incorrect.
A5	a. Is the motor ir sensor exposed to strong light (in the case of outdoor installation).
	b. Check motor ir sensor:

	b-1 .Check the wire connections of all motor ir sensors;
	b-2: Put a metal sheet on the front of the motor ir sensor and check if the light on the sensor is on (Y / N).
	b-2-Y: Adjust the position of the sensor;
	b-2-N: sensor is broken, replace sensor.
	b-3: If the wire connection and sensor are normal, the motherboard is broken.
Q6	Do not close for a long time after passing.
A6	a. Check if the opening time of the access control system is set to 1s.
	b. Check that the people detect ir sensor in the middle is working properly. Under normal circumstances, when an object is blocking the people detect ir sensor, the light at the end of the sensor will be on, and when the object is removed, the light at the end of the sensor will be off.
Q7	When the door is opened normally, the pedestrian will alarm when passing.
A7	a.The people detector sensors at the two ends of the machine are reversed.Please refer to F-5, exchange "LEFT SENSOR" and "RIGHT SENSOR" to test again.
	b.Entry/exit opening time too short, refer to item 5 in Chapter 2.

Appendix 1 Maintenance

Be sure to maintain it regularly, otherwise it will affect the service life of the equipment.

Equipment external cleaning and maintenance period

Maintenance period (according to the site environment).

General environmental maintenance period recommendations:

- Outdoor environment, once every 5 days and every time after rain.
- Indoor environment, once every 7 days.

In poor environment (high humidity, high salt spray, heavy dust, such as: within 50 km of the sea, within 20 km of a chemical plant, construction site, etc.), the recommended maintenance period is as follows:

- Outdoor environment, once every 2 days and every time after rain.
- Indoor environment, once every 5 days.

Equipment appearance rust remove period

Maintenance period (according to the site environment).

General environmental maintenance period recommendations:

- Outdoor environment, once every 15 days and every time after rain.
- Indoor environment, once every 30 days.

In poor environment (high humidity, high salt spray, heavy dust, such as: within 50 km of the sea, within 20 km of a chemical plant, construction site, etc.), the recommended maintenance period is as follows:

- Outdoor environment, once every 7 days and every time after rain.
- Indoor environment, once every 15 days.

Equipment internal maintenance



NOTICE

- Clean the internal power supply and circuit board of the equipment. Do not wash with water to avoid short circuit of the equipment.
- The maintenance cycle is once every 3 months.

Maintenance content:

- Cut off the power, open the cover of the device, and clean the internal dust.
- The outdoor unit is equipped with face/fingerprint recognition equipment. Please check whether there is any cracking at the glue place.
 - If there is glue opening, please clean the glue and make up the glue on a sunny day (the glue model is recommended to return to Tian 9661 or other outdoor glass glue).
 - If there is glue on the card swiping panel, you need to check whether there is glue opening. If it does, the treatment method is the same as that of the face device.
- Check whether the swing door and shaft screws are loose. If they are loose, tighten them again.
- Check whether the motor, bearings, fasteners, and drive shaft are all in a tightened state. If they are loose, tighten them again.
- Add anti-corrosive butter to the connecting rods, gears and other moving parts, and introduce Xiangli MP-30
- Check the circuits, cables, and connectors for any exposed or looseness. If it exists, bandage, organize, and tighten the plug-in.

Appendix 2 Stainless steel surface protection measures

Several situations that cause stainless steel to rust.

Try to avoid contact with substances that can induce rust.

- Ions, sulfur oxide substances, specifically acids such as HCL, H₂SO₄, and substances that can produce these acids after being dissolved in water, such as gases containing SO₄, salts, and HClO, will destroy the non-dynamic coating of stainless steel.
- Dirt, dust, soot, etc. will hinder the regeneration of the stainless steel non-dynamic coating.
- Dissimilar metals, mainly iron powder, will cause stainless steel to form "sticky rust".

Precautions for cleaning and maintenance of equipment and rust removal

- When cleaning the equipment, please cut off the power supply of the equipment first. Do not wet the equipment parts during the cleaning process.
- The cleaner should not contain abrasives with granular form to prevent chaotic drawing direction or damage to the surface.
- When cleaning, follow the drawing direction and scrub in order.

Equipment exterior cleaning and maintenance methods

- First wipe the surface of the equipment with a scouring pad, then apply a stainless steel care agent (DFF021 recommended) along the surface drawing direction, and then wipe the surface of the device with a scouring pad.
- If there is rust on the surface of the stainless steel that cannot be wiped off, please refer to the treatment method in "Appendix 2.2 Equipment External Derusting and Maintenance Method".

Derusting method of equipment appearance

First wipe the surface of the equipment with a scouring pad, then spray the stainless steel rust remover (recommended WD40), and then use the scouring pad to wipe the rust spots along the wire drawing direction. After wiping, moisten clean water with a scouring pad and wipe clean along the drawing direction. After the surface is cleaned and wiped dry, spray anti-rust paint (recommended model: Ciansi CRC2403). Do not touch the anti-rust paint before drying (usually 3 hours to 5 hours to dry naturally), otherwise it will affect the anti-rust effect.

Appendix 3 Statement

- This document is for multiple models of products. The appearance and functions of the product are subject to the actual product.
- Any loss caused by not following the instructions in this document shall be borne by the user.
- The content of this document will be updated in real time according to the laws and regulations of relevant regions. For details, please refer to the paper, electronic CD, QR code or official website of the product. If the content of the paper and electronic files are inconsistent, please refer to the electronic files.
- The company reserves the right to modify any information in this document at any time. The modified content will be added to the new version of this document without prior notice.
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