

Swing Turnstile (X)

User's Manual



Foreword

General

This manual introduces the functions and operations of the human passage 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.
 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
V1.0.5	- Update safeguards and warnings. - Update cable connection	December 2024
V1.0.4	Add stainless steel maintenance.	October 2024
V1.0.3	Update the manual.	December 2022
V1.0.2	Remove battery information in Inner Components chapter.	May 2020
V1.0.1	Add an electrical safety note.	April 2020
V1.0.0	First release.	March 2020

Privacy Protection Notice

As the device user or data controller, you might collect the personal data of others such as their face, audio, 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–+40°C) conditions.

Installation Requirements



- 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 Overview

1.1 Introduction

Human passage turnstile (hereinafter referred to as the “turnstile”) controls human passages of places like railway stations, factories, tourist resorts, libraries, and more.

1.2 Product Descriptions

3 versions of the turnstile are available.

Table 1-1 Product version description

Version	Description
Card unlock	Unlock with card to enter and exit from a place; an IC card reader and a face recognition access controller are provided.
One-way face unlock & two-way card unlock	Unlock with face or card to enter a place, unlock with card to exit from a place; an IC card reader and a face recognition access controller are provided.
Two-way face unlock & two-way card unlock	Unlock with face or card to enter and exit from a place; an IC card reader and two face recognition access controllers are provided.

1.3 Features

- Human-machine interactive parameter configuration.
- Barriers will be closed automatically if no one entered the turnstile after the identity is verified.
- Parameters can be restored to default settings.
- The lock and unlock of barriers can be controlled by remote controller (not provided).
- Two working modes: Normally open mode and normally closed mode.
- Four types of security settings.
- When receiving fire alarm signals, the turnstile will be normally open; and the turnstile can output alarm signals.
- Mechanical anti-pinch and IR anti-pinch.
- Anti-collision: The barriers cannot be broken even if they are violently kicked.
- Unlock and lock speed, pass duration, and lock delay duration are adjustable.
- Second unlock: If a person tries to pass the turnstile without identity verification, alarms will be triggered; if the person stays there and get the identity verified, the barriers will be unlocked.
- Continuous identity verification: If identities of several people (255 people at most) have been verified continuously, these people can pass the turnstile continuously.
- The turnstile can judge unlock directions. You can only enter or exit from a place from where you swipe the card; otherwise the barrier will be locked until the person leaves the turnstile.

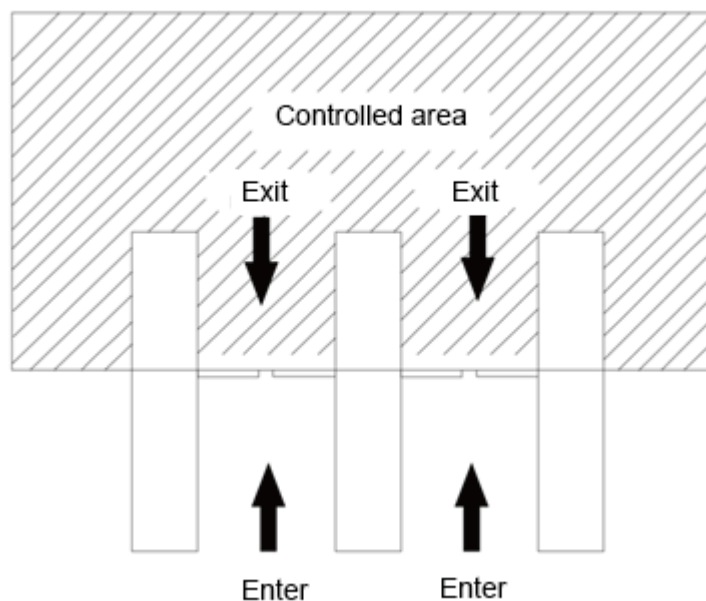
- Support intrusion alarm (entering and exiting), stay overtime alarm, trailing alarm, climbing turnstile alarm, unlock anomaly alarm, and more; when alarms are triggered, the indicator light will flash in red.
- Nine passing modes: Authenticated entering and exiting, authenticated entering and free exiting, authenticated entering and no exiting, free entering and authenticated exiting, free entering and exiting, free entering and no exiting, no entering and authenticated exiting, no entering and free exiting, and no entering and exiting.

1.4 Passage Control Mode

Three Passage Control Modes

- Users can unlock and pass the turnstile after swiping cards or verifying face.
- Users can pass the turnstile without identity verification (the IR sensor detects human and then unlock the turnstile).
- All users are not allowed to pass the turnstile.

Figure 1-1 Passage control mode



Nine Passing Modes

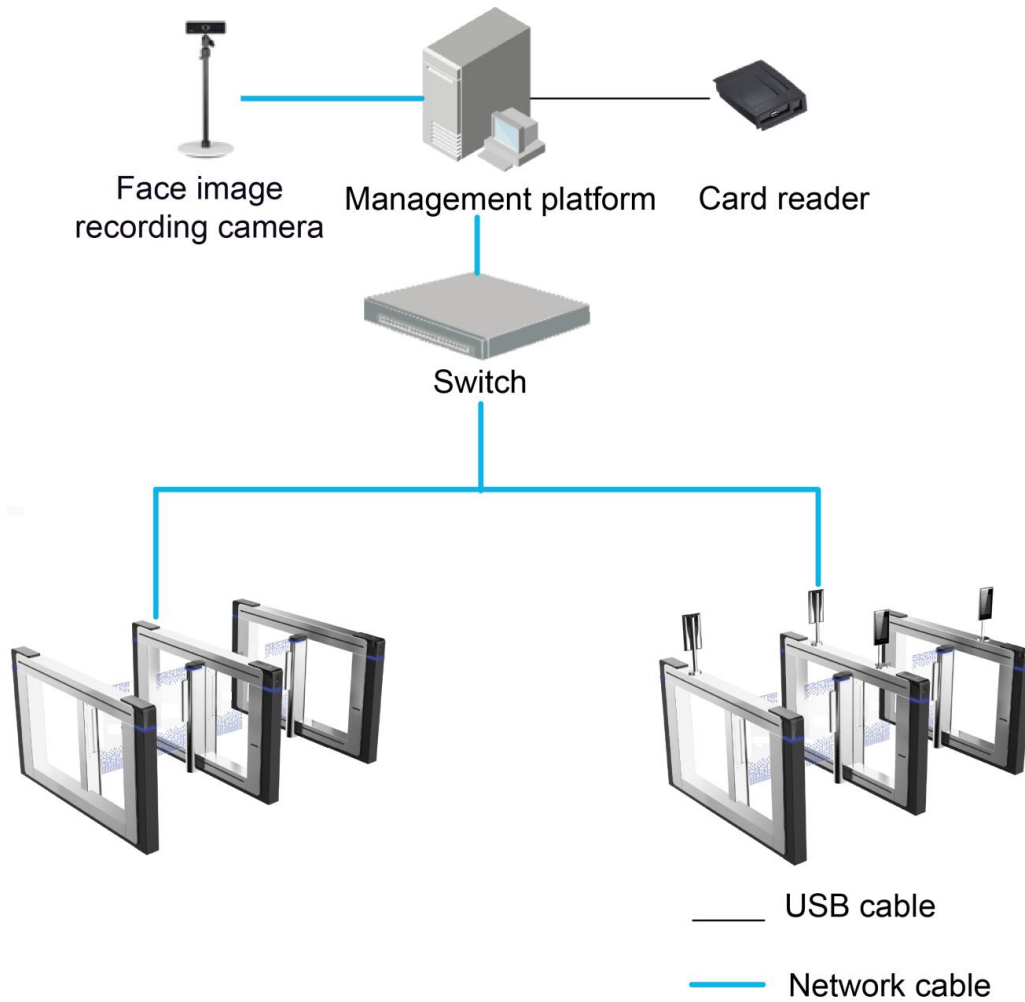
- Identity verification is needed when entering and exiting from a place.
- Identity verification is needed when entering a place; and identity verification is not needed when exiting from the place through the turnstile.
- Identity verification is needed when entering a place; and exiting from the place through the turnstile is not allowed.
- Identity verification is not needed when entering a place through the turnstile; and identity verification is needed when exiting from the place through the turnstile.
- Identity verification is not needed when entering and exiting from a place through the turnstile.
- Identity verification is not needed when entering a place through the turnstile; and exiting from the place through the turnstile is not allowed.

- Entering a place through the turnstile is not allowed; and identity verification is needed when exiting from the place.
- Entering a place through the turnstile is not allowed; and identity verification is not needed when exiting from the place.
- Entering and exiting from a place through the turnstile is not allowed.

2 Application

Information of cards and face images can be collected from turnstiles or be imported to turnstiles through network.

Figure 1-2 Application



3 Structure

3.1 Appearance

There are two types of turnstiles: One-motor module turnstiles and two-motor module turnstiles. The turnstile in the middle is two-motor module turnstile, and the others are one-motor module turnstiles.

Figure 3-1 Appearance (1)

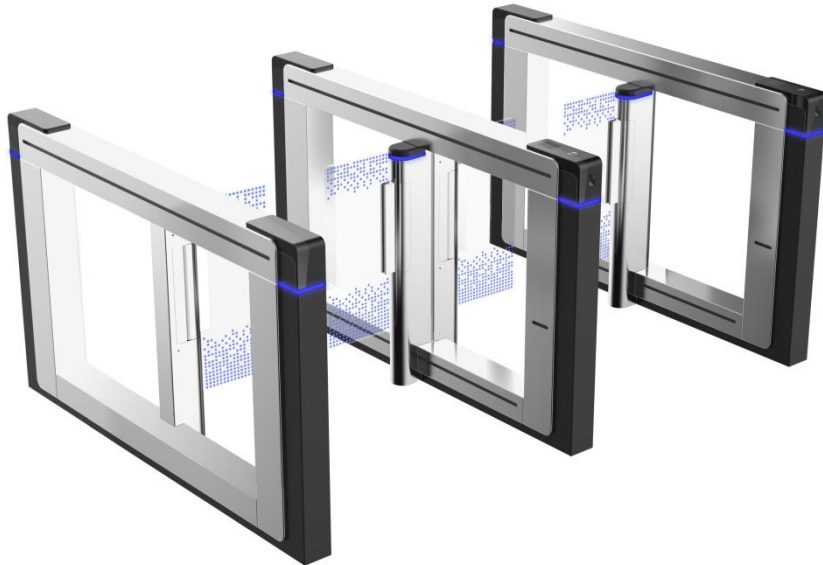
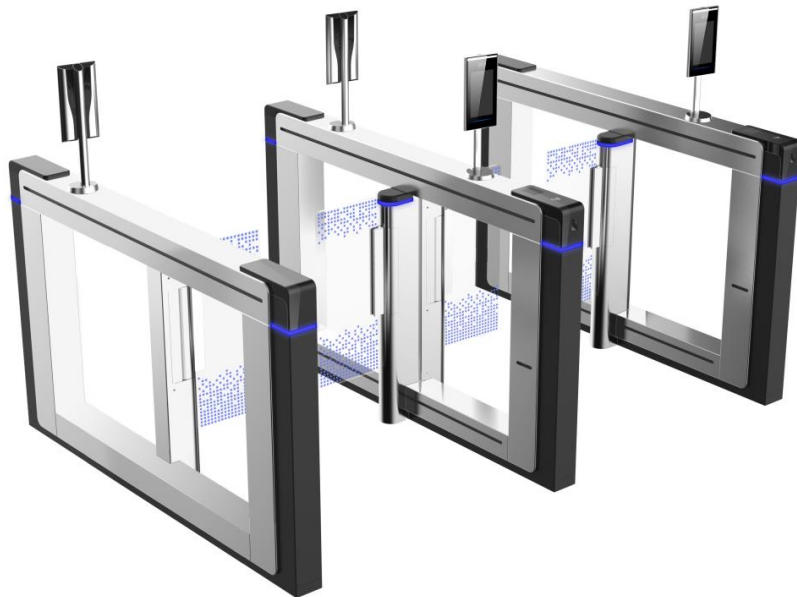
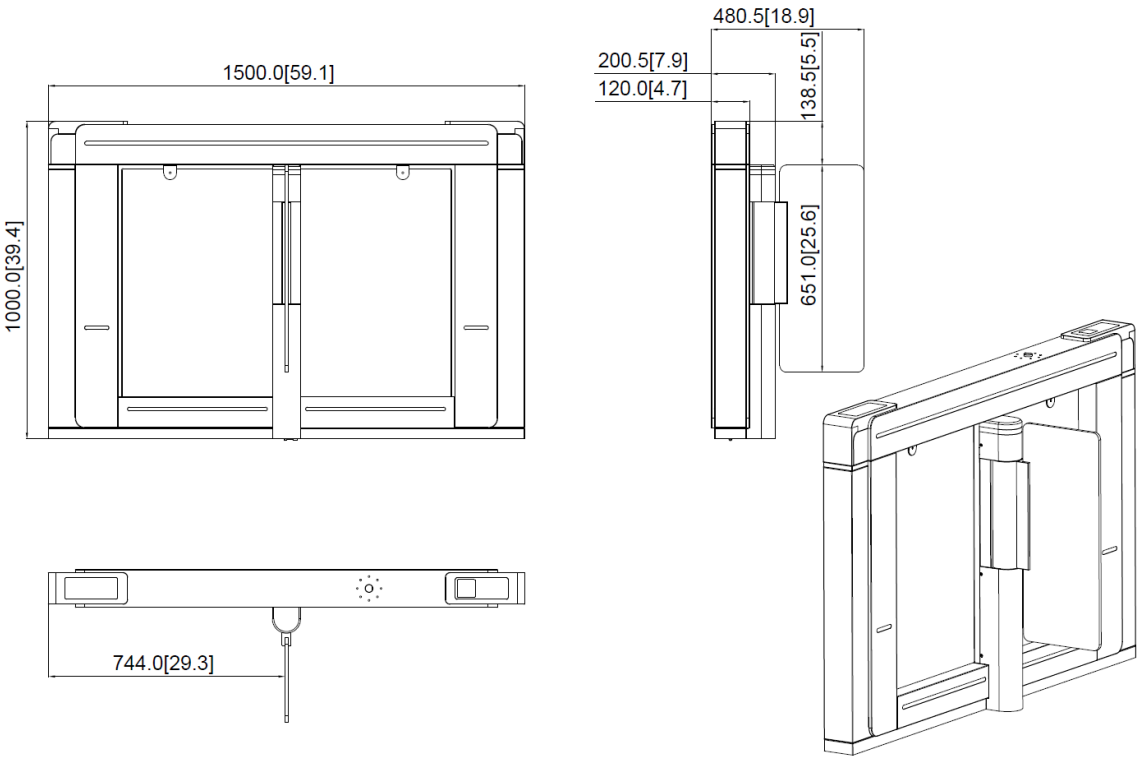


Figure 3-2 Appearance (2)



3.2 Dimensions

Figure 3-3 Dimensions (mm [inch])



3.3 Inner Components

Figure 3-4 Inner components

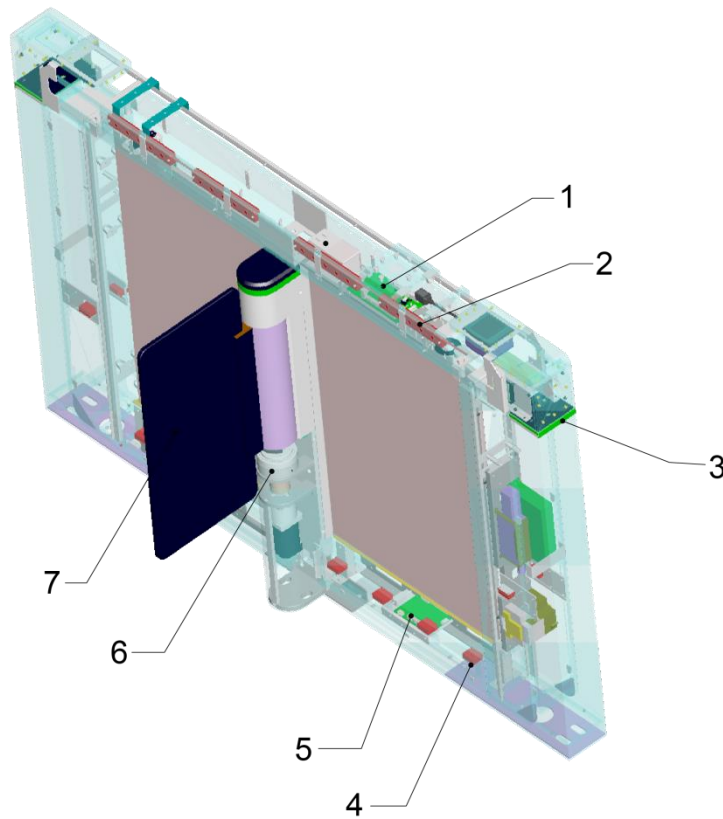


Table 3-1 Inner components description

No.	Name	Description
1	Turnstile control panel	It is the turnstile control center. It receives, judges, and processes turnstile location synchronization signals and firefighting signals, and signals from access control main board and IR sensor; and then sends orders to turnstile indicator lights, electric motors, alarm devices, and counters.
2	Light curtain sensor	Collect the location information of passages.
3	Passage indicator lights	● Green light glows: Authenticated, barriers locked. ● Green light flashes: Passage is allowed. ● Red light flashes: Device anomaly or in alarm status. ● Blue light glows: Standby status.
4	IR sensor	Collect the location information of passages.
5	Motor driver panel	Externally connected with encoder, clutch and motor. Receives signals from the turnstile control panel to control the motor rotation and clutch engagement.
6	Clutch	Used for emergency braking of barriers.
7	Swing barrier	Locks and unlocks the turnstile.

4 Installation

4.1 Safety Instructions



WARNING

- You need to strictly confirm to requirements in the manual during installation; otherwise we shall not be responsible for any loss occurred.
- Incorrect installation and improper operation might bring damages to humans or objects.
- Security devices and control devices used must confirm to EN12978 standard.
- Before installing, wiring, and dismantling the turnstile, disconnect the turnstile from power source first.
- The turnstile consists of various mechanical and electrical devices, any neglect during installation might cause damage.
- If smoke, unpleasant odor, and strange noise come out, turn off the power, unplug the turnstile, and then contact the dealer or service center.
- Do not dismantle the turnstile cover unless necessary; otherwise human and property damage and loss might occur.

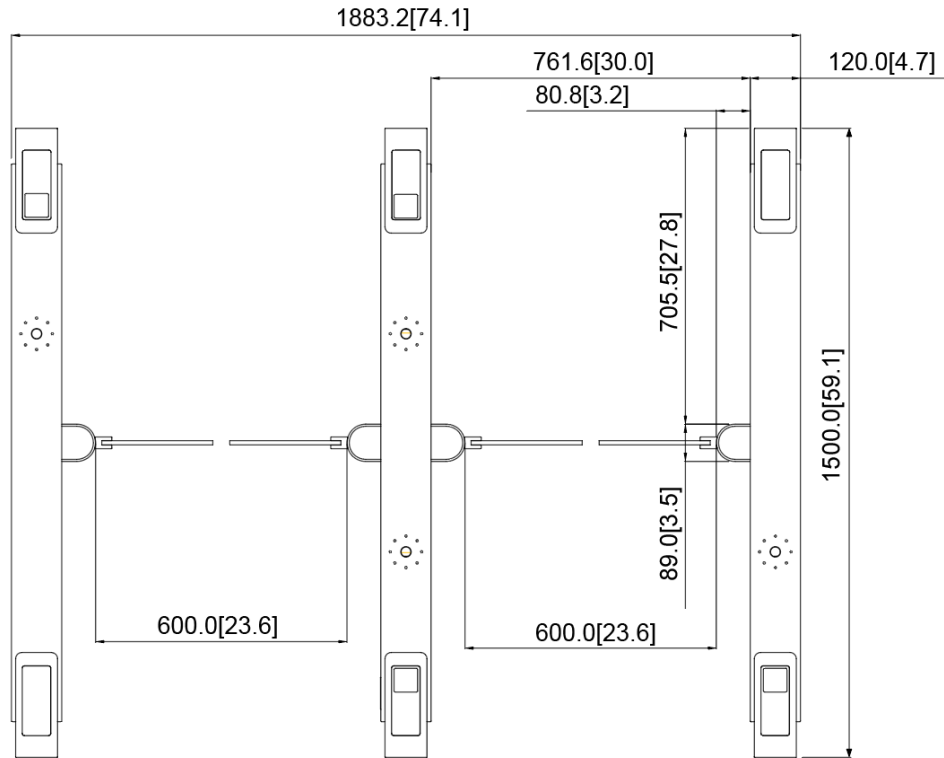


- Install the turnstile firmly.
- When connected to 220 VAC power, ground cable must be correctly connected.
- Before operating the turnstile, make sure that owners and operators can all see the turnstile status.
- Humans are not allowed to stand between turnstiles to operate after the turnstile is powered on.
- After installing the Turnstile, make a stainless steel maintenance at once.

4.2 Before Installation

- Make sure that the ground where the turnstile is installed is flat.
- Build a concrete base (above 100 mm high) when the turnstile needs to be installed at places with high humidity or are easily water-logged. Apply silicone sealant to gaps between the ground and turnstile to prevent water and condensation.
- Make sure that the PVC pipe is buried more than 150 mm under the ground, and the height of the PVC pipe above the ground should be greater than 50 mm. Bend the PVC pipe end that get out of the ground to prevent water leakage. Keep the ground where the turnstile is installed dry.

Figure 4-1 Installation drawings (mm [inch])



4.2.1 Tools

Tools might vary according to installation surfaces.

- Cement ground
Percussion drill, drill No.16, marking pen, tape measure, levelling instrument, hammer, wrench, angle grinder, cutting machine, and screwdriver.
- Marble and ceramic ground
Due to fragileness of marble and ceramic ground, use pistol drill to drill holes on marble and ceramic ground, and then use percussion drill to make the holes deeper.

4.2.2 Cable Connection

- Before laying cables, check that the cable labels are clear labeled.
- Make sure that AC power cable, communicating cable, and signal cable are separate (power cables with higher frequency, greater power and current and those with lower frequency, less power and current must not be placed in the same PVC pipe).
- Bury the PVC pipes deeper than 150 mm. The length of PVC pipe that on the ground should be longer than 50 mm.
- Thread PVC pipes through cable entry on the installation base.

Figure 4-2 PVC pipe layout (mm)

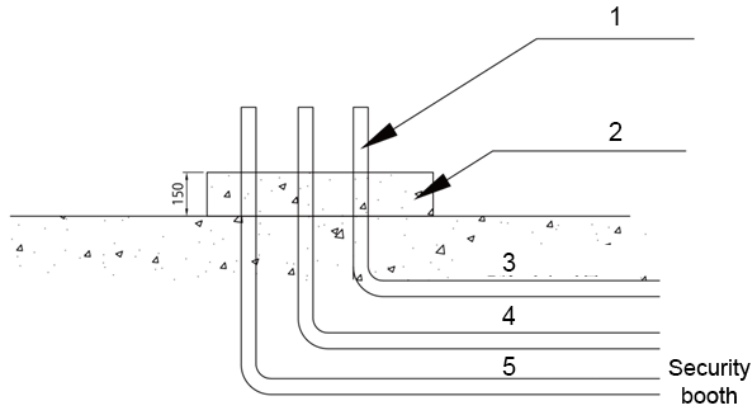


Table 4-1 PVC pipe layout description

No.	Name
1	1" PVC pipe
2	425# cement base
3	Power cable pipe
4	Signal cable pipe
5	Communication cable pipe

Figure 4-3 Cable connection

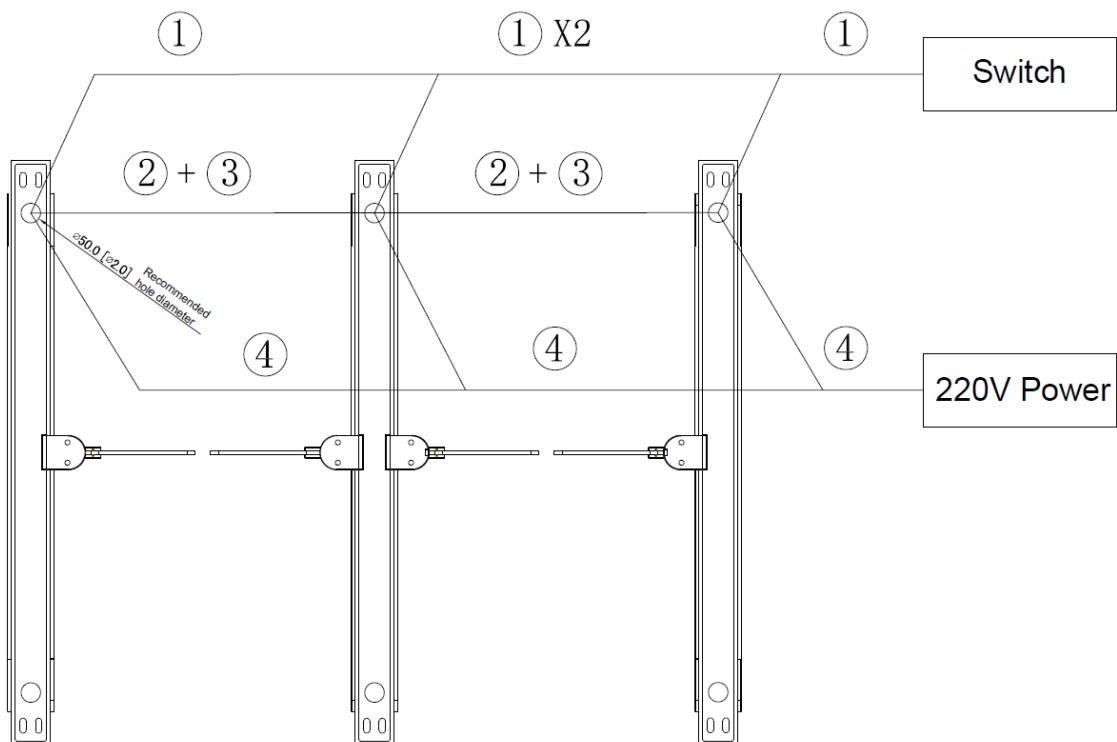


Table 4-2 Cable connection

Cable number	Cable type	Description
1	Network cable (CAT5)	Two-way face unlock turnstile. Connect 1 network cable for the turnstiles on the left and right respectively, and connect two network cables for the turnstile in the middle. Make sure that the cable outside the cable entry is 3 meters long.
2 and 3	Turnstile synchronization cable and light curtain cable	Connect the two turnstiles with 2 cables (one 4-core CAN and RS-485 cable and one light curtain cable). Make sure that the cable outside the cable entry is 2 meters long.  The synchronization cable and light curtain cable are provided.
4	Power cable	Connect 1 network cable for each turnstile, and make sure that the cable outside the cable entry is 3 meters long.

4.2.3 Cable Layout Diagram

For recommended cable layout, see Figure 4-4. If you lay cables incorrectly like Figure 4-5 does, the turnstile might not be firmly installed and cables might be broken when hammering expansion screws.

Figure 4-4 Recommended cable layout (mm [inch])

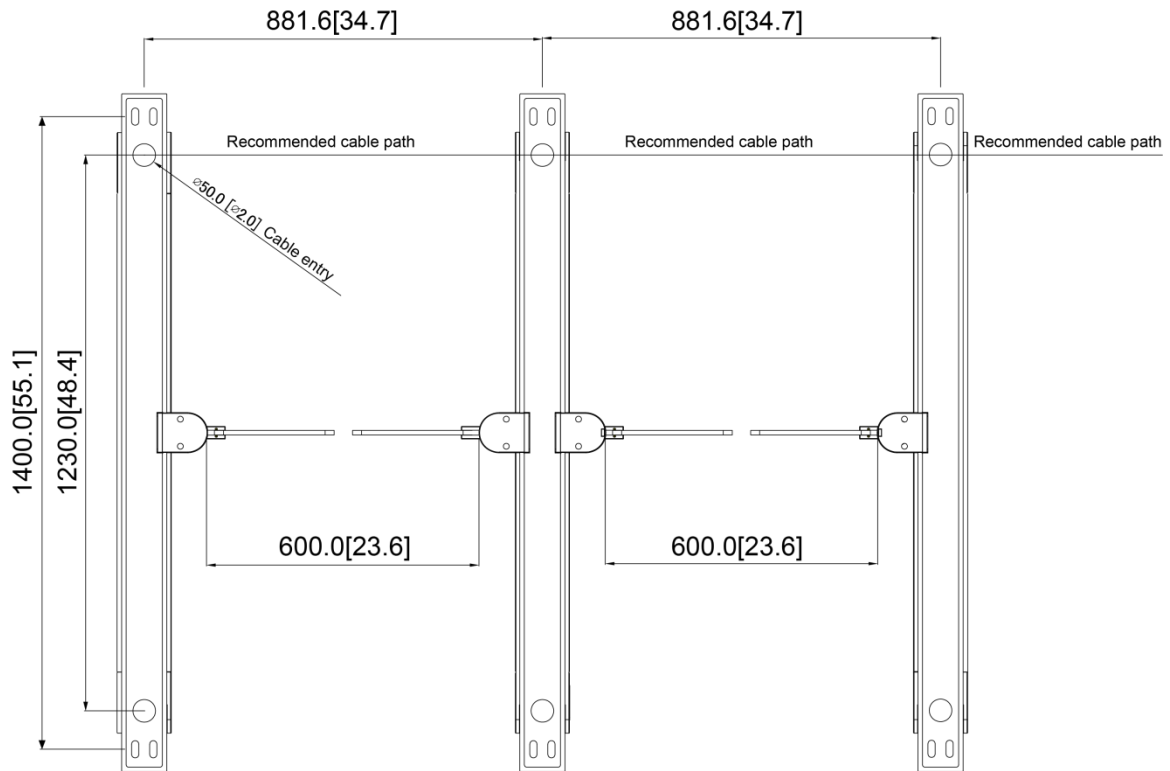
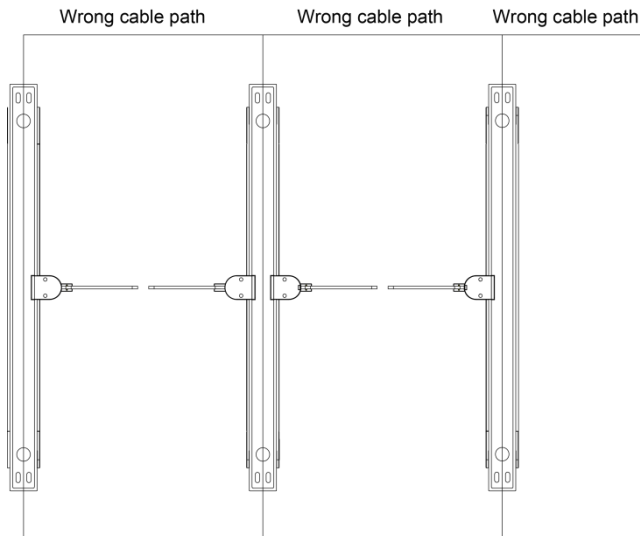


Figure 4-5 Wrong cable layout



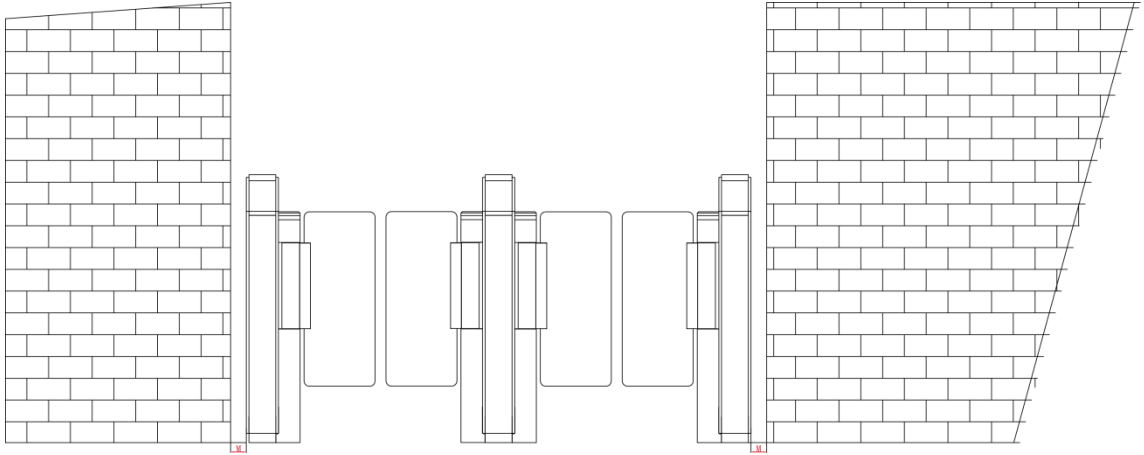
4.3 Installation Procedure

4.3.1 Drilling Holes

Before installing turnstiles next to buildings, leave some space between the turnstiles and buildings.

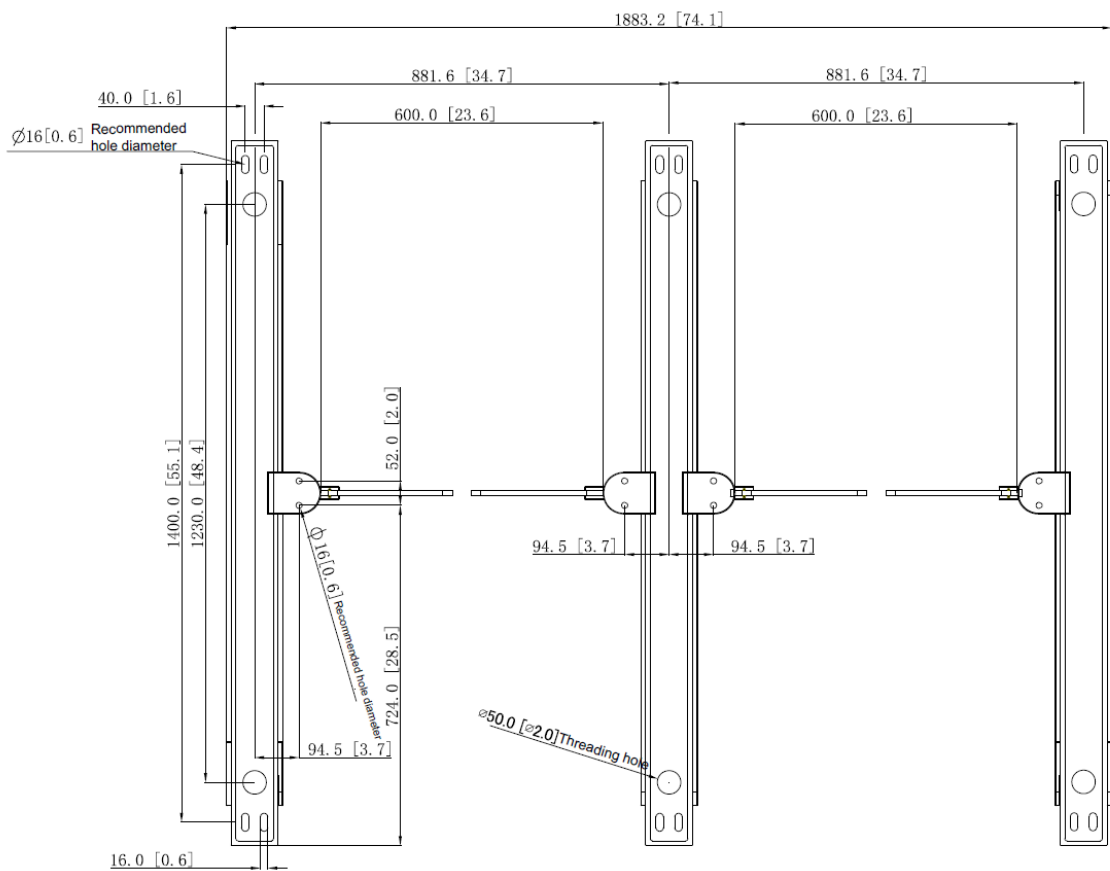
- Arrows on the inner cover of the turnstile must point to the same direction.
- When installing turnstiles next to buildings, make sure that their distance is no less than 70 mm and no more than 100 mm. This distance enables that turnstile cover can be opened during maintenance, and prevents human from passing through gaps between turnstiles and buildings.

Figure 4-6 Install turnstiles next to buildings



Step 1 Draw 6 turnstile installation holes. See Figure 4-7.

Figure 4-7 Hole drilling diagram(mm [inch])



Step 2 Drill holes in the installation surface (like cement). For hole diameters, hole depth, and anchor bolt diameters, see Table 4-3.

Table 4-3 Anchor bolt specification

Parameter	Dimensions
Anchor bolt specification	M12×120
Hole depth (mm)	95
Hole diameter (mm)	16

Step 3 Compress air to remove dust in the holes.

Step 4 Hammer the anchor bolt into the hole bottom.

Step 5 Tighten the nut of the anchor bolt with the wrench, and then hammer the bolt again.

4.3.2 Adjusting Turnstile Position

Step 1 Loosen the fixing screws with a hex wrench, and then remove the upper cover and the side panel.



- Before removing the side panel, you need to unplug the LED light cable from the side panel.
- Handle gently to prevent scratches on the surface.

Figure 4-8 Turnstile cabinet doors

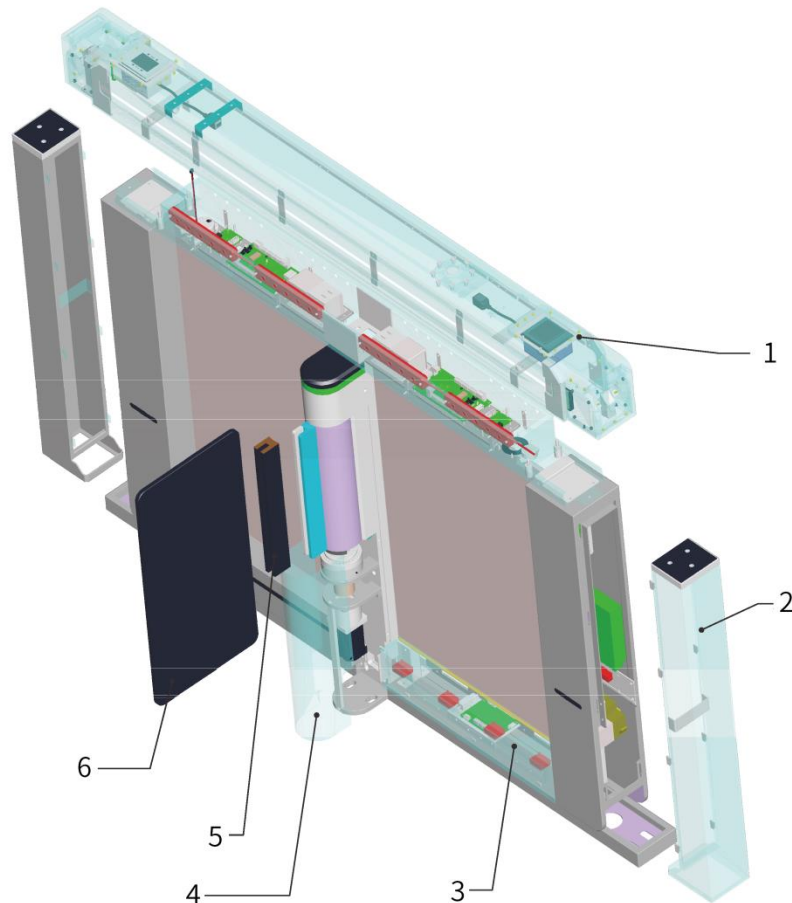
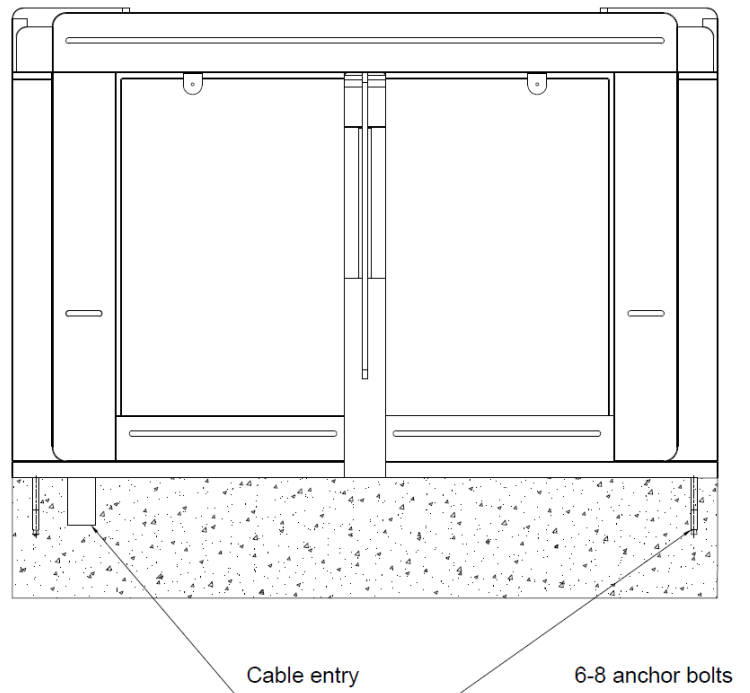


Table 4-4 Turnstile cabinet doors

No.	Name
1	Upper cover
2	Side panel
3	Bottom cover
4	Motor cover
5	Decorative panel
6	Swing barrier

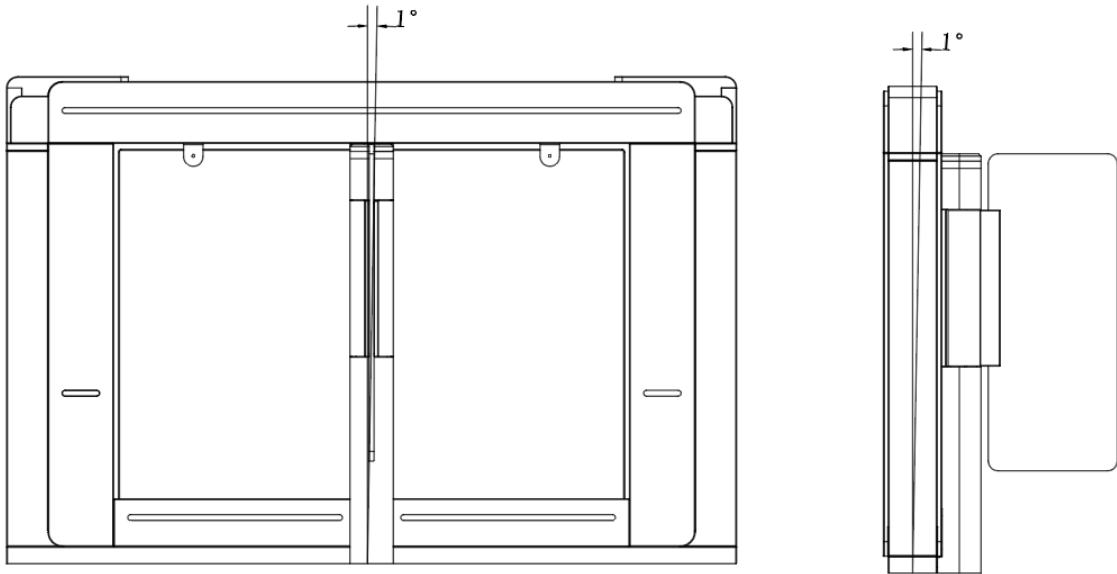
Step 2 Thread cables through the turnstile cable entry, and keep them organized to avoid cable broken.

Figure 4-9 Cable entry



- Step 3 Lift the turnstile, adjust its position, make the holes in the turnstile overlap with the anchor bolt, and then place the turnstile on the ground.
- Step 4 Use a gradienter to measure angles of inclination of the ground where the turnstile is installed. For appropriate flatness tolerance, see Figure 4-10.

Figure 4-10 Ground flatness tolerance



Step 5 Repeat Step 1–Step 4 to install other turnstiles.

- Arrows on the inner cover of the turnstile must point to the same direction.

Figure 4-11 Upper cover direction

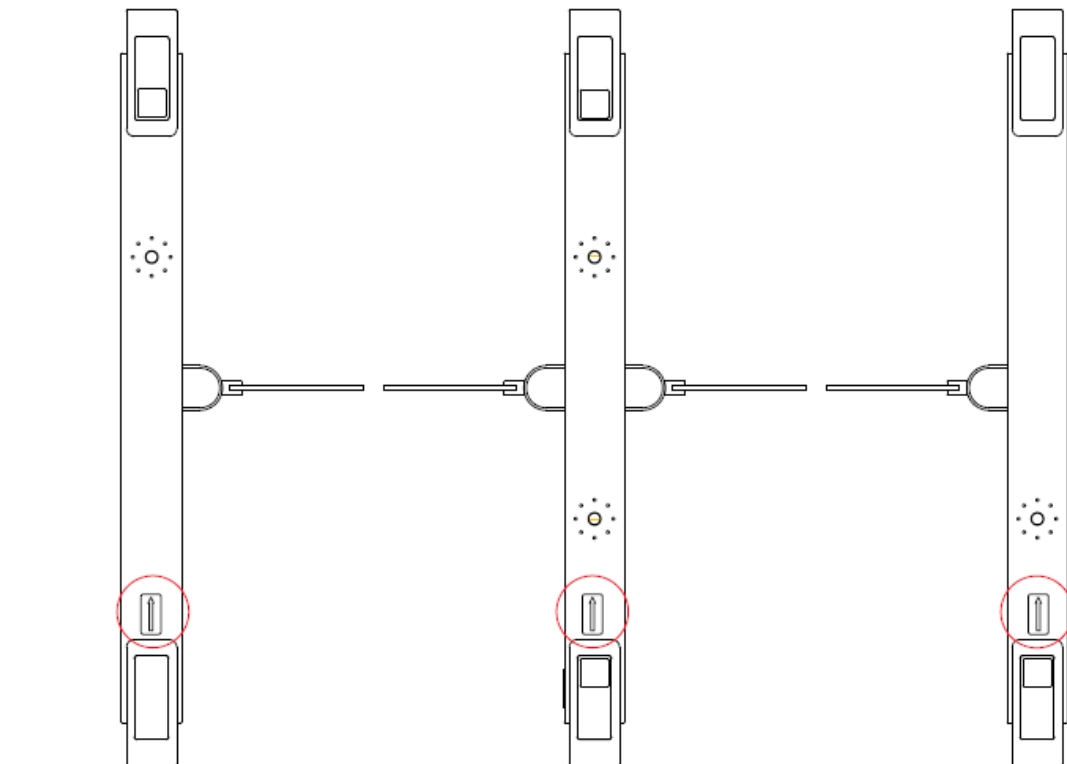
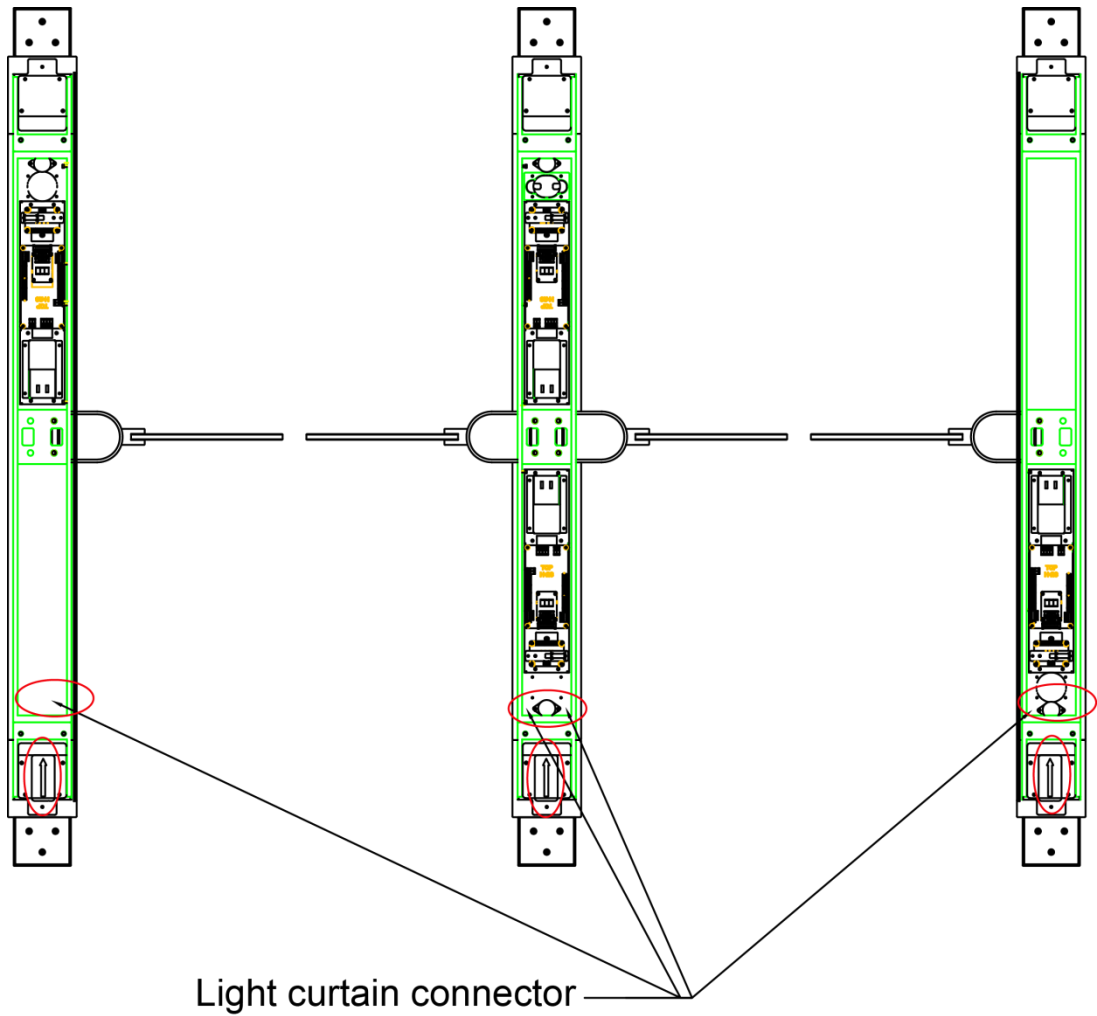


Figure 4-12 Light curtain connector location



- Make sure that height difference and parallelity difference of turnstiles are within the appropriate range.

Figure 4-13 Height difference (mm [inch])

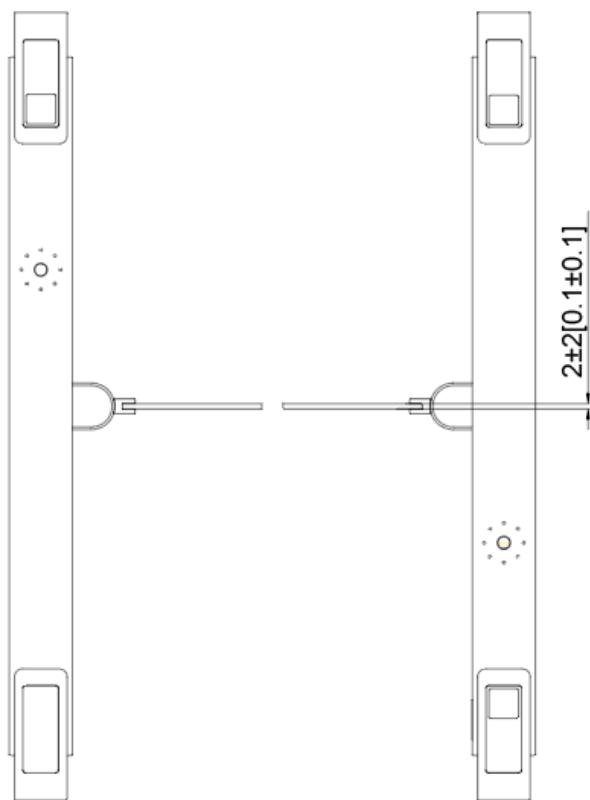
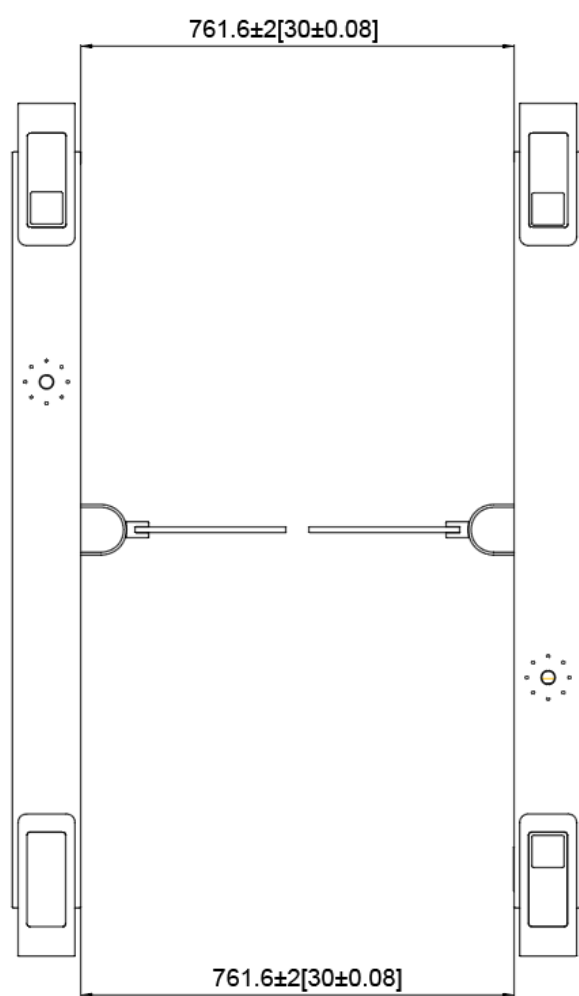


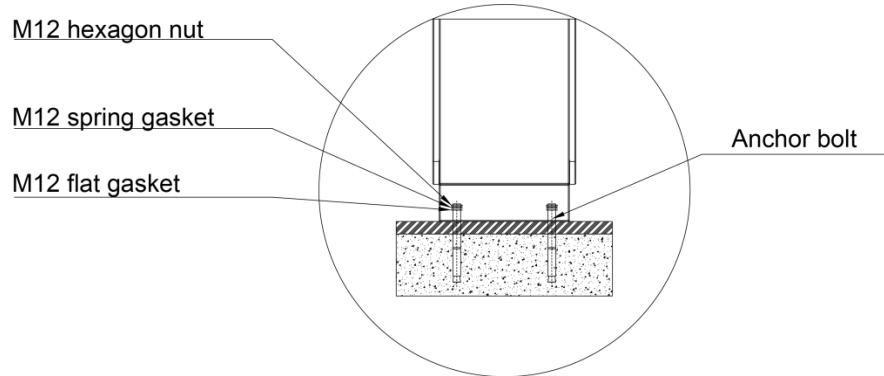
Figure 4-14 Parallelity difference (mm [inch])



4.3.3 Fixing Turnstiles

- Step 1 After adjustment, put M10 surface gasket, M10 spring gasket, and M10 nut on the anchor bolt, and then tighten the nut manually. See Figure 4-15.
- Step 2 Tighten all nuts with the wrench.
- Step 3 Apply silicone sealant to gaps between the turnstile and the ground to avoid water leakage.

Figure 4-15 Fixing turnstiles



4.3.4 Installing Swing Barriers

- Step 1 Loosen and take out the two M3 screws with a screwdriver, and then pull up the decorative panel.
- Step 2 Loosen and take out the three M6 screws, and then take out the door cover.
- Step 3 Place the swing barrier in the proper position and put back the decorative panel. Make sure that the screw position of the door cover and the screw position of the swing barrier are aligned and tightened.
- Step 4 Tighten the two M3 screws to complete the installation.

Figure 4-16 Installing swing barriers

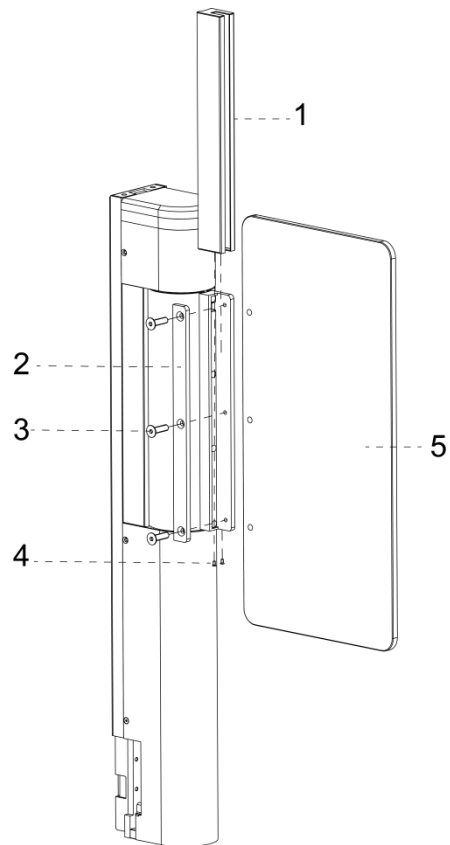


Figure 4-17 Installing swing barriers

No.	Name
1	Decorative panel
2	Door cover
3	M6 screw
4	M3 screw
5	Swing barrier

5 Cable Connection

5.1 Turnstile Control Panel Port Description

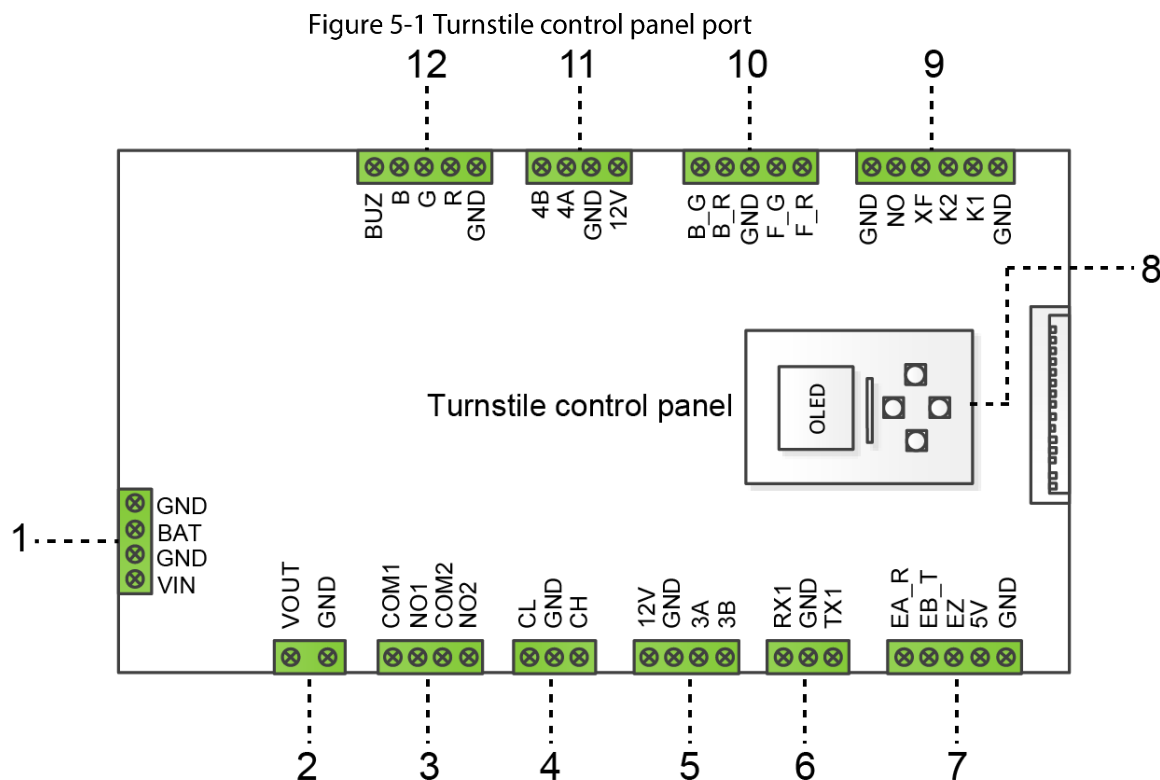


Table 5-1 Turnstile control panel port description

Port No.	Description
1	- GND, +24V: Inputs 24V/6.5A DC power source for the control panel. - GND, BAT: Connected to storage batteries; when AC power is disconnected, storage batteries start to work.
2	VOUT, GND: 24V power output for powering the motor driver board.
3	COM1/NO1 receives entering signals and COM2/NO2 receives exiting signals. The two relays can be configured to output alarm signals or population volume signals.
4	Connects two swaying barriers with synchronization cable to synchronize their movements.
5	12V, GND, 3A, 3B: RS-485 port for program update.
6	RS-232 port for connecting access controller or face recognition terminal.
7	- GND, 5V: Ground port of the power supply and 5V power input port. - EA_R, EB_T, EZ: Communicates with RS-232 port of motor driver board.
8	Display module, for turnstile local configuration.

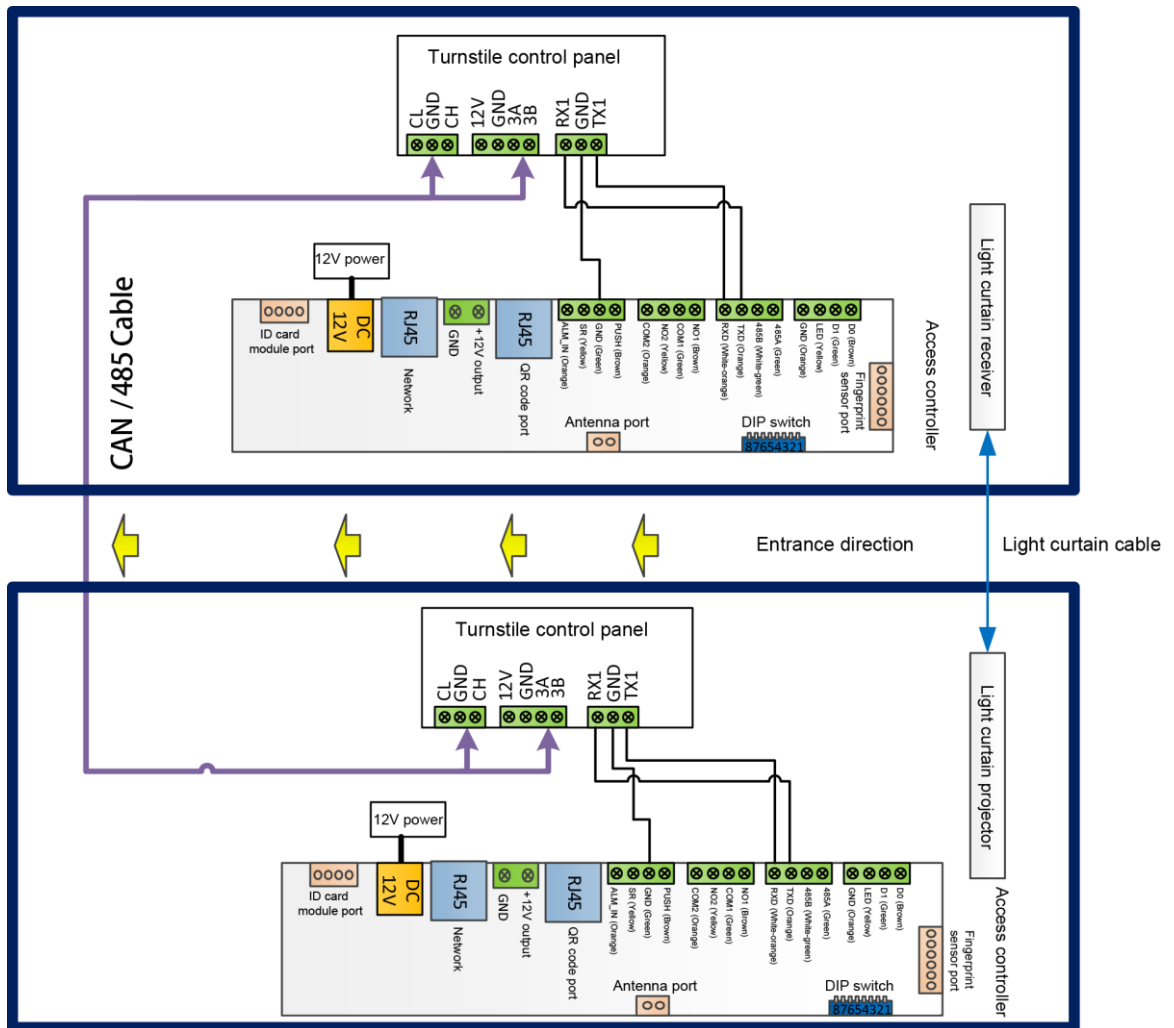
Port No.	Description
9	• K2, GND: Receives exiting unlock signals from turnstile control panel or face recognition terminals. • K1, GND: Receives entering unlock signals from turnstile control panel or face recognition terminals. • NO: Input port of signals from the normally open button. The barriers keep unlocked until the second input signal. • XF: Firefighting signal input port. The barriers will keep unlocked until firefighting signals disappear.
10	Preserved.
11	• GND, 12V: Ground port of the power supply and 5V power input port. • A4, 4B: Encoder port.
12	GND, R, G, B, BUZ: Connected to turnstile indicator lights.

5.2 Access Controller (Two-Way Card Unlock)



- For two-way card unlock mode, set the DIP switch of the access controller to 00000000.
- The IP address of the access controller is 192.168.1.108 by default; the username is admin, and the password is admin by default.
- A separate power adapter is required when you install an access controller.

Figure 5-2 Access controller (two-way card unlock) cable connection

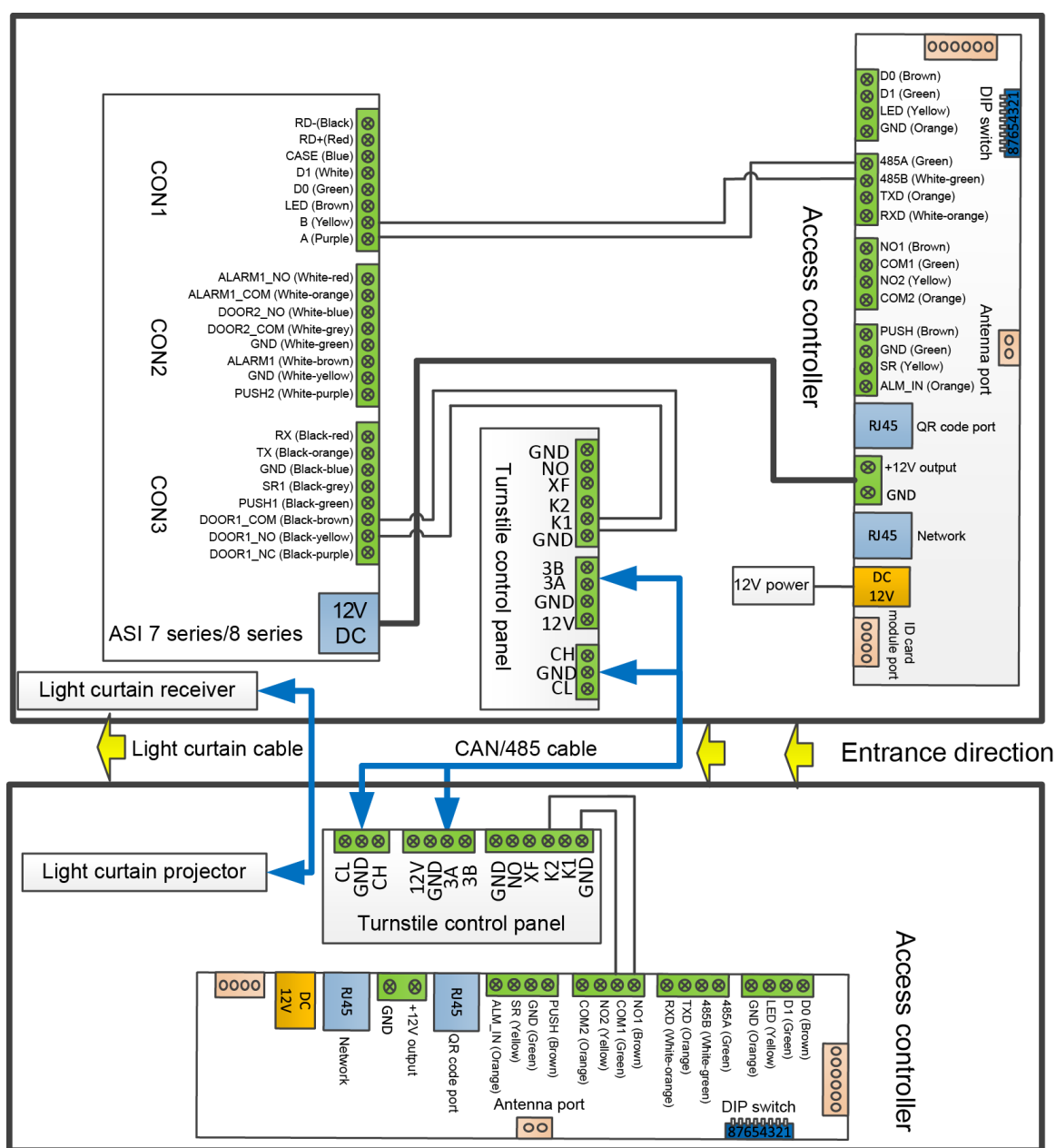


5.3 Face Recognition Terminal of ASI7/8 Series (One-way Face Unlock & Two-way Card Unlock)



- Set the DIP switch of the face recognition access controller to 0000001, and set the DIP switch of the IC card reader to 00000000.
- The IP address of the access controller is 192.168.1.108 by default; the username is admin, and the password is admin by default.
- The unlock duration for the face recognition access controller should be configured as 0.2 seconds.
- A separate power adapter is required when you install a face recognition access controller.

Figure 5-3 Face recognition terminal of ASI7/8 series cable connection (1)

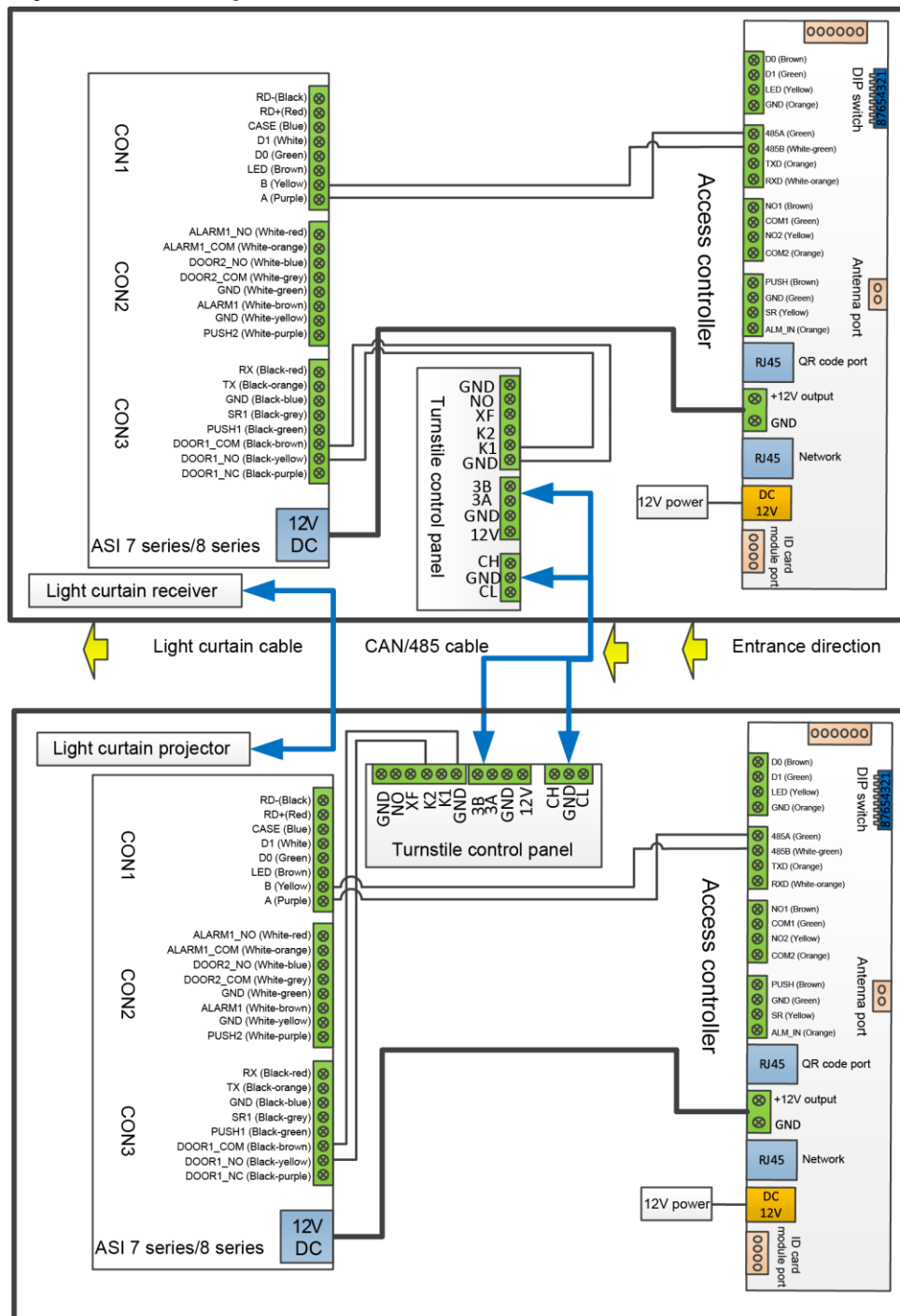


5.4 Face Recognition Terminal of ASI7/8 Series (Two-way Face Unlock & Two-way Card Unlock)



- Set the DIP switch of the face recognition access controller to 0000001.
- The unlock duration for the face recognition access controller should be configured as 0.2 seconds.
- A separate power adapter is required when you install a face recognition access controller.

Figure 5-4 Face recognition terminal of ASI7/8 series cable connection (2)



6 Configuration and Commissioning

Parameters can be configured through the four buttons on the turnstile. Parameters configured on each turnstile can be synchronized (except barrier origin).

6.1 Display Operation

Figure 6-1 Display buttons

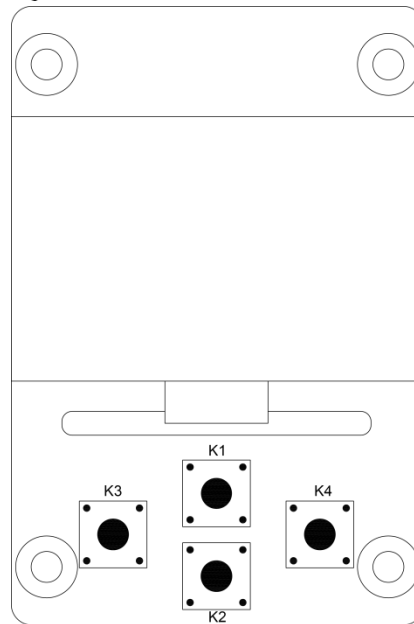


Table 6-1 Button description

Button name	Description
K1: Up	Press the button to move up the menu items or adjust the current parameter value.
K2: Down	Press the button to move down the menu items or adjust the current parameter value.
K3: Exit	Press the button to exit the menu or cancel the current configuration.
K4: Menu/Confirm	Press the button to enter the menu or confirm current configuration.

6.1.2 Working Mode

The turnstile supports 2 working modes:

- Normally open mode
This mode is applicable when there might be a great number of people passing the turnstile in a certain period.
- Normally closed mode
When normally closed mode is selected, the turnstile cannot be unlocked by anyone.

6.1.3 Passage Control Mode

The turnstile supports 9 passage control modes:

- Identity verification is needed when entering and exiting from a place (default mode).
- Identity verification is needed when entering a place, and identity verification is not needed when exiting from the place.
- Identity verification is needed when entering a place, and exiting from the place is not allowed.
- Identity verification is not needed when entering a place, and identity verification is needed when exiting from the place.
- Identity verification is not needed when entering and exiting a place.
- Identity verification is not needed when entering a place, and exiting from the place is not allowed.
- Entering a place is not allowed, and identity verification is needed when exiting from the place.
- Entering a place is not allowed, and identity verification is not needed when exiting from the place.
- Entering and exiting from a place are not allowed.

6.1.4 Passing Duration Settings

Passing duration is the maximum duration allowed for passengers to pass the turnstile after identity verification. Passengers need to pass the turnstile within the passing duration; otherwise the stay overtime alarm will be triggered.

The following passing duration options are available:

- 2 s
- 5 s
- 10 s (default)
- 15 s
- 20 s
- 30 s
- 45 s
- 60 s

6.1.5 Lock Delay Settings

Lock barriers a certain period later than the passing duration.

The following lock delay duration options are available:

- 0 s (default)
- 2 s
- 3 s
- 5 s
- 8 s
- 15 s
- 30 s
- 60 s

6.1.6 Security Level Settings

- 1: Trailing others and exiting through the turnstile when others are entering are allowed and light alarm will be triggered. The barrier will not be locked in both normally open mode and normally closed mode.
- 2: Trailing others and exiting through the turnstile when others are entering are not allowed and sound and light alarm will be triggered. The barrier will not be locked in both normally open mode and normally closed mode.
- 3: Trailing others and exiting through the turnstile when others are entering are not allowed.
 - ◇ When visitors with permission have passed the turnstile, sound and light alarm will be triggered before trailing people and people try to take the chance to exit through the turnstile entered the anti-pinch area (IR sensor can detect humans before they enter the anti-pinch area). The barriers will be locked in both normally open mode and normally closed mode.
 - ◇ When visitors with permission and people try to take the chance to exit through the turnstile have not entered the anti-pinch area, the barrier will be locked.
 - ◇ When trailing people and people try to take the chance to exit through the turnstile entered the anti-pinch area, sound and light alarm will be triggered. The barrier will not be locked in both normally open mode and normally closed mode. The barriers will be locked after trailing people and people try to take the chance to exit through the turnstile have passed the turnstile.
- 4: Trailing others and exiting through the turnstile when other people are entering a place are not allowed. When visitors with permission have passed the turnstile, sound and light alarm will be triggered wherever the trailing people and people try to take the chance to exit through the turnstile are. The barrier will be locked in both normally open mode and normally closed mode.

6.1.7 Second Unlock Settings

After people entered the passing area and alarms are triggered, they do not need to step backwards and can get their identity verified directly. Second unlock is on by default.

6.1.8 Memory Mode Settings

After swiping card once, more than one person can pass the turnstile. Memory mode is off by default.

- If several people are permitted to pass the turnstile, and one of them did not pass the turnstile in 5 seconds, or stayed overtime between the turnstiles, the swing barriers will be locked. At this time, you need to swipe cards several times to allow several people pass the turnstile continuously.
- In the memory mode, if the authorization interval exceeds the passing duration, the number of passing authorizations will not be accumulated.
- The interval between two identity verifications must be longer than the unlock duration of the access controller; otherwise, only one identity verification will be counted. The recommended identity verification is 2 s to 5 s.
- In the memory mode, at most 255 people can pass the turnstile continuously.

6.1.9 Unlock and Lock Speed Settings

The following unlock and lock speed levels are available:

- 1: The slowest
- 2
- 3
- 4
- 5
- 6: Default
- 7
- 8: The fastest



The speed increases from 1 to 8.

6.1.10 Volume Settings

The following volume levels are available:

- 1: Mute
- 2: The lowest
- 3
- 4
- 5
- 6: Default
- 7
- 8: The highest



The volume increases from 1 to 8.

6.1.11 Unlock Settings After Power-off

The unlock direction after power-off can be set to Exit or Enter. Exit is by default.



The unlock direction cannot be configured when the power-off is triggered by the firefighting signals. The unlock direction after power-off is Exit.

6.1.12 Start Mode

Table 6-2 Start mode settings

Function	Mode
Normal	Normal mode. After setting origin start, you need to set the start mode to normal mode.

Function	Mode
Origin	Original position adjustment mode. You need to adjust original positions of barriers for the first use. 1. After power-on, go to the menu Start Mode, and then select the Origin option. 2. Power off the turnstile, and align the two swing barriers. 3. Power on the turnstile, and wait for the swing barriers stopping swing, and then set the start mode to normal mode.
Aging test	Test mode.  Test mode is indented for developers, and non-developers are prohibited to use this mode.

6.1.13 Origin Settings

There are 2 origin modes are available: Left origin and right origin.

6.1.14 Passage Width Settings

Passage width range is 600 mm–1200 mm. The following passage width options are available:

- 600
- 700
- 800
- 900
- 1000
- 1100 (only for Y turnstile)
- 1200 (only for Y turnstile)

You need to adjust the width according to barrier length. For passenger safety, if the passage width is ≥ 900 mm, security level cannot be set.



If the passage width is ≥ 900 mm, it is recommended to choose a speed of unlock and lock below 6. Excessive speed affects the motor life, and it is easy to hit intruder and trailing people.

6.1.15 System Information

Table 6-3 System information

Menu	Information
Version	Software version number and compile date.
Counter	IN: passengers entered. OUT: passengers exited.
Restore	Restore to factory defaults.
Device type	Swing barrier or wing barrier.
Barriers material	Acrylic or stainless steel.

Menu	Information
Light curtain status	Display light curtain status.
Clean passager number	Whether to clean passager number.

6.1.16 Language

Language options: Simplified Chinese and English.

6.2 Power-On Test



All turnstiles must be connected to power source.

Before doing the power-on test, make sure that:

- All components of the turnstile work normally. The turnstile has been tested but the component connection might still be slightly different.
- The cable is properly connected.
- The synchronization cable is connected, and control panel cable connections of the turnstile in the middle are correct.
- The swing barriers are adjusted to the central position.

Step 1 Perform power-on self-test.

- 1) Power on the turnstile and adjust the start mode to origin mode, and then power off the turnstile.
- 2) Adjust and align the swing barriers to the correct position.
- 3) Restart the turnstile and the turnstile performs self-test automatically.

The swing barriers will swing left and right during the self-test.

After the swing, if the buzzer does not beep, it means that the self-test succeeds.

If the power-on self-test failed, the buzzer beeps, and the corresponding alarm prompts on the display.



Each time the turnstile is disconnected from power source and connected to power again, the turnstile will do power-on self-test. After the power-on self-test, the turnstile will go to normal working status.



During power-on self-test, passengers are not allowed to pass the turnstile, IR sensors cannot be blocked, and barrier movements cannot be interfered.

Step 2 Change the start mode to normal mode.

Step 3 Set passage control mode for the turnstile: Identity verification is not needed when entering and exiting from a place. Observe barrier movements and positions when unlocking and locking the turnstile.

When a person enters the passage, the barriers will automatically open, and when a person exits the passage, the barriers will automatically close.

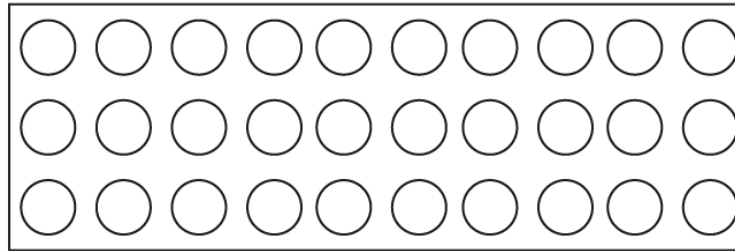


After registering cards and assigning face unlock permissions, you can set passage control mode as identity verification is needed when entering and exiting from a place.

6.3 IR Light and Light Curtain Anomaly Determination

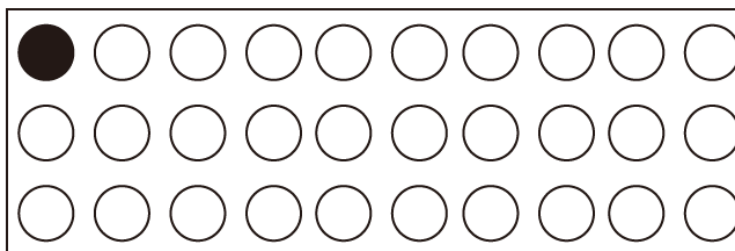
In display module of passage control mode, you can view the status of IR light and light curtain through System Info > Curtain Status.

Figure 6-2 Light curtain status



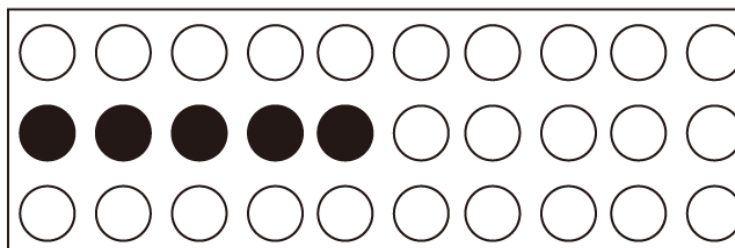
- The hollow circle indicates untriggered status and the solid circle indicates triggered status.
- The first row is an IR indication. Each dot corresponds to an IR, from left to right, IR 1, IR 2 ... IR 10.
- The second and the third rows are light curtain indication, and every 5 dots correspond to a light curtain:
 - ◇ Light curtain 1: 1-5 dots of row 2.
 - ◇ Light curtain 2: 6-10 dots row 2.
 - ◇ Light curtain 3: 1-5 dots of row 3.
 - ◇ Light curtain 4: 6-10 dots of row 3.
- To determine if it is abnormal:
 - ◇ If there is no block in the passage, the light curtain status is shown as Figure 6-2.
 - ◇ If IR 1 is blocked, the light curtain status is shown as Figure 6-3.

Figure 6-3 Light curtain status: IR 1 is blocked



- ◇ If light curtain 1 is blocked, the light curtain status is shown as Figure 6-4.

Figure 6-4 Light curtain status: Light curtain 1 is blocked



7 FAQ

1. After the turnstile is plugged in, power indicator light will not be on.

- 1) Check whether the power adapter works normally.
- 2) Check whether the codes of air switch are correct.

2. After the power-on self-test failed, the buzzer beeps and the power-on self-test error code "E01" is displayed on the numeric display.

- 1) Check whether IR sensors are blocked during power-on self-test.
- 2) Check whether all turnstiles are connected to power source.
- 3) Open the side door of the turnstiles, and then check whether the indicator light on the IR sensor board is red. If the indicator light is red, it means IR sensors are blocked or are not aligned.
- 4) IR sensors are broken. Contact technical support to change new IR sensors.

3. After the power-on self-test failed, the buzzer beeps and the power-on self-test error code "E02" is displayed on the numeric display.

Check whether communication cables of all turnstiles are correctly connected.

4. After power-on self-test failed, the buzzer beeps and the power-on self-test error code "E03" is displayed on the numeric display.

Check whether the barrier movements were interfered during the power-on self-test. If not, contact the technical support.

5. The barrier is disconnected from power source, swing barriers cannot be unlocked.

- 1) Check whether the battery cable is correctly connected.
- 2) Check whether the battery voltage is normal. The normal battery voltage is 12 V.

6. After a visitor swipe an authorized card, the barrier still cannot be unlocked.

- 1) Check whether the card is a valid card.
- 2) Check whether cable connection between data collection board and access controller is correct.

7. After a visitor pass the turnstile with the identity verified, the turnstile barriers cannot lock themselves.

Adjust the lock delay duration.

8. Trailing alarm is triggered when a visitor pass the turnstile with the luggage.

There are gaps between the visitor and the luggage. It is normal that trailing alarm being triggered.

9. Turnstile indicator lights are not on.

Check whether cable connection between passing direction indicator lights and passage indicator lights is correct.

10. Barriers cannot be locked or unlocked during days with heavy rains and passage indicator lights flash in red.

Dry rain drops on the acrylic plate, especially acrylic plate outside the IR sensors.

Appendix 1 Maintenance

Maintain the turnstile regularly; otherwise its lifespan or performance will be influenced.

Turnstile Exterior

- Maintenance period (depending on the site environment), for a better environment:
 - ◇ Outdoor, once every half month or after each raining day.
 - ◇ Indoor, once every two months.
- Maintenance content: Clean the turnstile cabinet and swing barriers.
 - ◇ Dip a piece of soft cloth in a neutral detergent or clean water, and then clean the cabinet surface.
 - ◇ High salinity and humidity environment, acid rain, and sweat will corrode the stainless cabinet surface. Use scouring pad to clean the rust (you can also use rust remover), and then dip a piece of soft cloth in a neutral detergent or clean water to clean the cabinet surface.

Turnstile Interior



Clean the power supply and circuit board. Do not use water to clean the interior to avoid short circuit.

- Maintain the turnstile once every three months.
- Maintenance content
 - ◇ Disconnect the turnstile from power source, open the turnstile cover, and then clean the dust inside.
 - ◇ Make sure that the motor, bearing, fastening device, screws, and more are tightened.
 - ◇ Apply lubricants to radius rods and gears.
 - ◇ Check whether there is loose cable connection. If yes, organize and cover bare cables, and then tighten screws. Replace the aged cables (if any).

Appendix 2 Maintenance of the Stainless Cabinet Surface



After installing the Turnstile, make a stainless steel maintenance at once.

Appendix 2.1 Rust Protection and Adhesive Failure

Stainless steel will not get rusty unless it is used inappropriately in harsh environments.

Rust Protection

Do not make the turnstile be close to rust inducing substances; otherwise the turnstile might be more likely to get rusty.

- Ions, sulfur oxide, acidic substances that contains HCL and H_2SO_4 , or substances that produce acidic substances (contain SO_4 , salts, and HCLO) after dissolving in water.
- Substances like soot and dust will impede the stainless steel producing protection film.
- Metal with iron powder will produce adhesive rust on the stainless steel.

Adhesive Failure Protection

After sticking protective film on the stainless steel, protect it from UV rays (direct sunlight), heat, pressure, and more to avoid adhesive failure.

Appendix 2.2 Removing Dirt and Rust

Remove Protective Film Mark

Use sponge or cloth dipped with mixed solutions of ethyl alcohol, naphtha, banana oil, methylbenzene, and acetonehunheye to clean the film mark. Clean solutions on the stainless steel surface with clean cloth. You must use clean water to clean the surface at last.

Clean Dirt and Fingerprints

Generally, neutral detergent or soap can remove dirt and fingerprints; otherwise, use organic solutions (ethyl alcohol and naphtha). After cleaning the surface with organic solutions, you should clean the solutions on the surface immediately. Stainless steel cleaner is recommended.

Clean less Rust

Use stainless steel cleaner to clean less rust.

Clean More Rust

If adhesive rust on the stainless steel was not cleaned in time, the stainless steel will get rusty. As time goes by, thick tawny rust or red rust is hard to remove.

Appendix 2.3 Precautions

Cleaning Requirement

- Cut off power supply before cleaning the turnstile. Do not wet components inside the turnstile.
- Make sure that the detergent you use does not contain abradant graininess; otherwise the turnstile surface will be damaged.
- Clean the surface along lines on the surface.
- Dry the surface after using detergent and clean water.

Detergent Requirement

- Do not use acidoid especially sulphuric acid, sulphurous acid, and acids that contain chlorine or nitrogen.
- If there is adhesive failure, use organic solutions that are without oxidability. Ethyl alcohol, dimethylbenzene, acetone are normally used.
- For stainless steel whose surface has been processed (mirror surface or titanium surface), make sure that the detergent does not contain abradant graininess.

Appendix 3 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 lockout function

The account lockout 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 Allow list**

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

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).

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