Swing Turnstile (Y)

User's Manual

Foreword

General

This manual introduces the functions and operations of the swing turnstile (hereinafter referred to as "the turnstile").

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, lower performance, or unpredictable result.
⊙—ᴰ **TIPS**	Provides methods to help you solve a problem or save you time.
📖 **NOTE**	Provides additional information as the emphasis and supplement to the text.

Revision History

Version	Revision Content	Release Time
V1.0.1	Updated the installaiton process of swing barrier.	September 2021
V1.0.0	First release.	April 2020

Privacy Protection Notice

As the turnstile 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 turnstile.
- 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.

Transport Requirements

Transport the turnstile under the allowed humidity and temperature conditions.

Store Requirements

Store the turnstile under the allowed humidity and temperature conditions.

Installation Requirements

⚠️ **WARNING**

● Connect the turnstile to the adapter before power on.
● Strictly abide by local electrical safety standards, and make sure that the voltage in the area is steady and conforms to the power requirements of the turnstile.
● Do not connect the turnstile to more than one power supply. Otherwise, the turnstile might become damaged.

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● Observe all safety procedures and wear required protective equipment provided for your use while working at heights.
● Do not expose the turnstile to direct sunlight or heat sources.
● Do not install the turnstile in humid, dusty or smoky places.
● Install the turnstile in a well-ventilated place, and do not block the ventilator of the turnstile.
● Use the power adapter or case power supply provided by the turnstile manufacturer.
● Keep the turnstile installed horizontally on the stable place to prevent it from falling.
● The power supply must conform to the requirements of ES1 in IEC 62368-1 standard and be no higher than PS2. Note that the power supply requirements are subject to the turnstile label.
● Connect class I electrical appliances to a power socket with protective earthing.

Operation Requirements

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● Do not use the turnstile when thunder occurs; otherwise the turnstile might be damaged.
● Make sure that the power supply of the turnstile works properly before use.
● Do not pull out the power cable of the turnstile while it is powered on.
● Only use the turnstile within the rated power range.

- Transport, use and store the turnstile under allowed humidity and temperature conditions.
- Prevent liquids from splashing or dripping on the turnstile. Make sure that there are no objects filled with liquid on top of the turnstile to avoid liquids flowing into it.
- Do not disassemble the turnstile.
- Improper battery use might result in fire, explosion, or inflammation.
- When replacing battery, make sure that the same model is used.
- Use the power adapter provided with the turnstile; otherwise, it might result in people injury and turnstile damage.
- The appliance coupler is a disconnection turnstile. When using the coupler, keep the angle for easy operation.
- The external power cable must meet the working temperature at least 75℃.

Maintenance Requirements

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- After the installation, remove the protective film and clean the cabinet.
- One of the main component of the turnstile products is stainless steel. Stainless steel has good rust-resistance (resistance to atmospheric oxidation) and corrosion resistance (corrosion resistance in acid, alkali, salt-containing media), but its corrosion resistance ability will change with chemical compositions, environment and other factors. To keep the stainless steel in good condition and extend its service life, it needs to be maintained regularly.
- If the turnstile is installed near places like swimming pool entrance, 50 km near the seaside, construction sites, and more, the stainless surface must be maintained more frequently.
- Do not use painting diluent or organic agent during maintenance.

Precautions for Use

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- Expectant mother, the elderly, and children must pass the turnstile under guard.
- Children less than 1 meter of height must be held in the arms of adults when they pass through the turnstile.
- Pass through the turnstile quickly. Do not stay or play in the turnstile.
- The turnstile only allows one person to pass through at a time.
- Pass through the turnstile with the luggage by your side or in front of you.
- Do not force entry to the turnstile.

⚠

- When you pass the turnstile after authorization, make sure there is no person on the opposite side of the turnstile, otherwise the barriers will be locked until the person on the opposite side exits.
- Pass the turnstile as soon as possible after authorization. If the person does not pass it within specified time, the barriers are automatically closed.

- When multiple people enter, people can pass through the turnstile with continuous authorizations when the memory mode is enabled, and the authorization interval is recommended to be 2 s–5 s.
- Pay attention to the status of the turnstile indicator before entering. Green indicates the turnstile is allowed to pass through, while red means no entry.
- Pay attention to the status of the turnstile indicator during identity verification. Blue indicates no identity verification; green indicates successful identity verification and access is allowed; red indicates that the identity verification fails and access is denied.
- Do not force entry to the turnstile. This turnstile features anti-tailgating function and anti-reverse passing function. If you break in forcibly, the system will lock the turnstile, which may cause personal injuries.
- Do not swipe the authorized card with other cards, otherwise the turnstile cannot correctly identify the authorized card.
- Protect the authorized card from damages to avoid identity verification failure.
- To avoid system misjudgment, do not block the black acrylic strips on both sides of the turnstile with the carry-on items when passing through the turnstile.
- To avoid system misjudgment, do not use the turnstile when you move goods.

Table of Contents

1 Overview

1.1 Introduction

Swing Turnstile (hereinafter referred to as the "turnstile") controls passage in areas 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 passes through 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 applicable to different scenarios.
- 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 through duration, and lock delay duration are adjustable.
- Second unlock: when a person attempts to pass the turnstile without identity verification, alarms are triggered; when a 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, tailgating alarm, climb over alarm, open abnormality alarm, and more; when alarms are triggered, the indicator light will flash in red.
- Nine passage 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 (the turnstile is locked).

Figure 1-1 Passage control mode
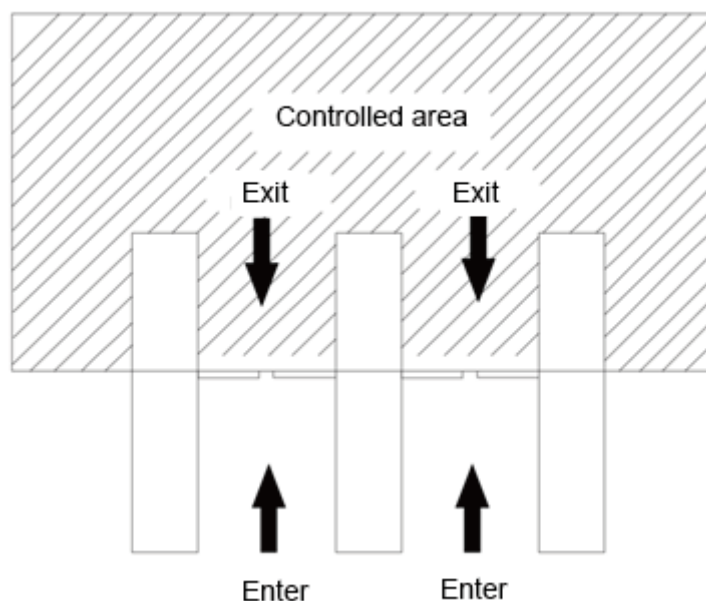
Nine Passage Modes

- Entry with valid authorization and exit with valid authorization.
- Entry with valid authorization and free exit.
- Entry with valid authorization and locked exit.
- Free entry and exit with valid authorization.
- Free entry and free exit.
- Free entry and locked exit.
- Locked entry and exit with valid authorization.
- Locked entry and free exit.
- Locked entry and locked exit.

2 Application

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

Figure 2-1 Application

Face image recording camera   Management platform   Card reader

Switch

—— USB cable
—— Network cable
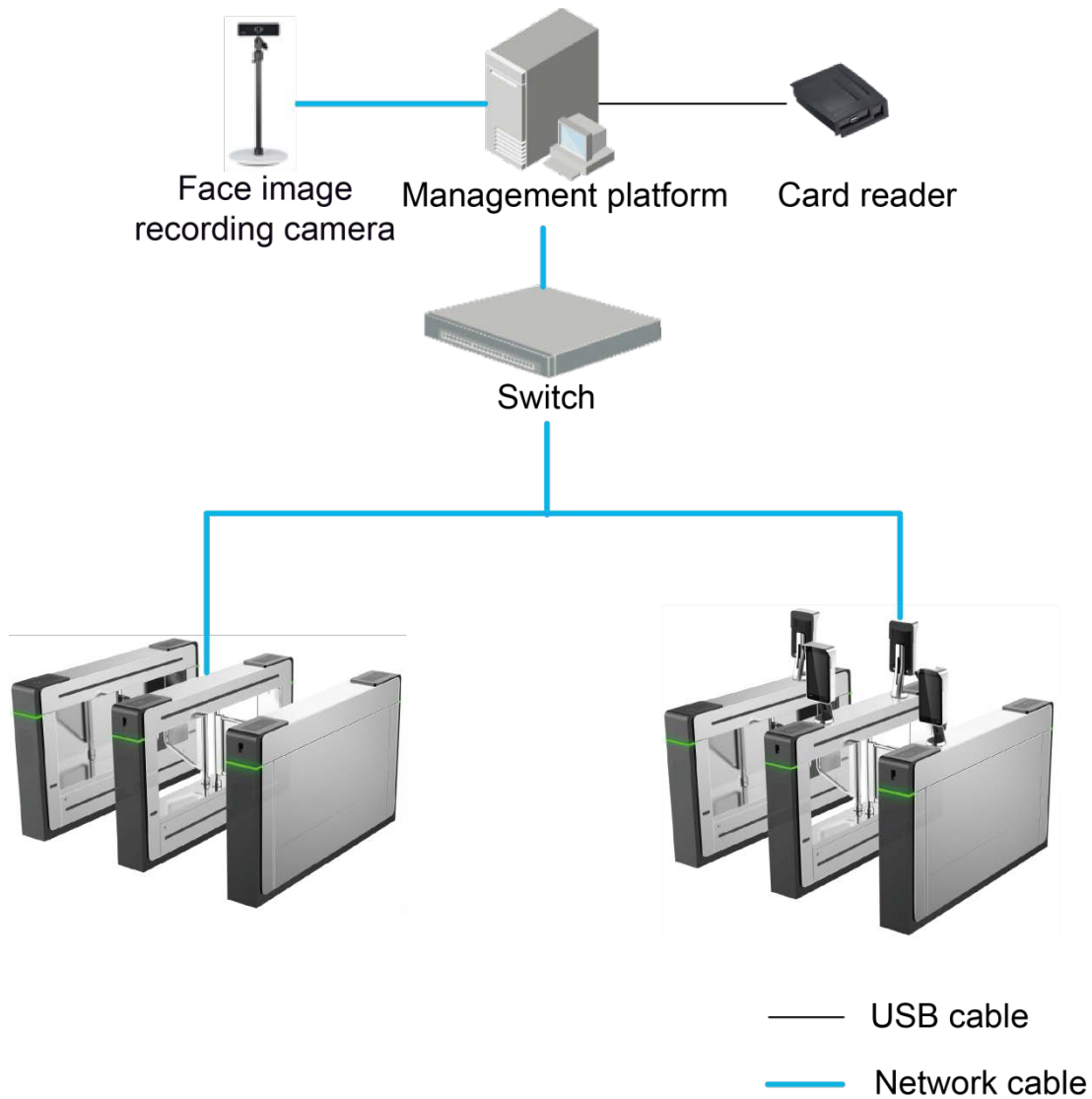
3 Structure

3.1 Appearance

There are two types of turnstiles: One-motor module turnstiles and two-motor module turnstiles. A pair of end cabinets create a single lane. A center cabinet and two end cabinets create a multi-lane passage.
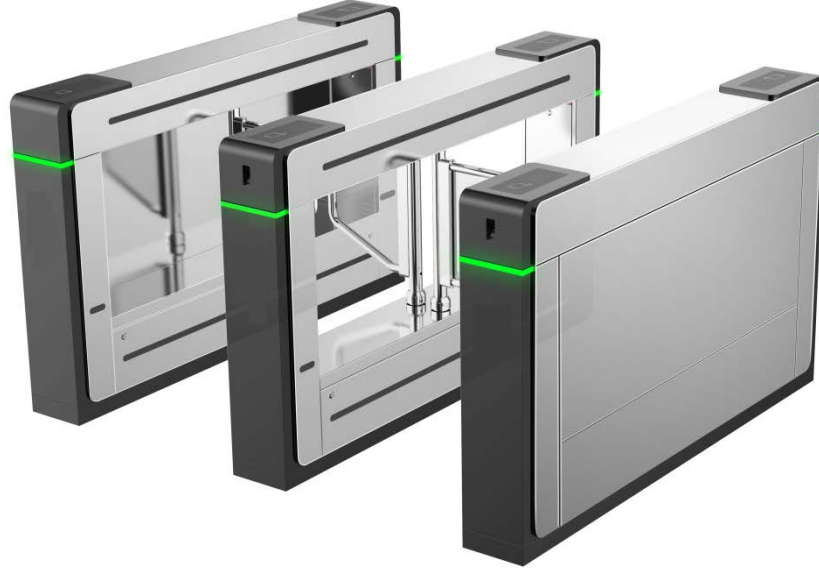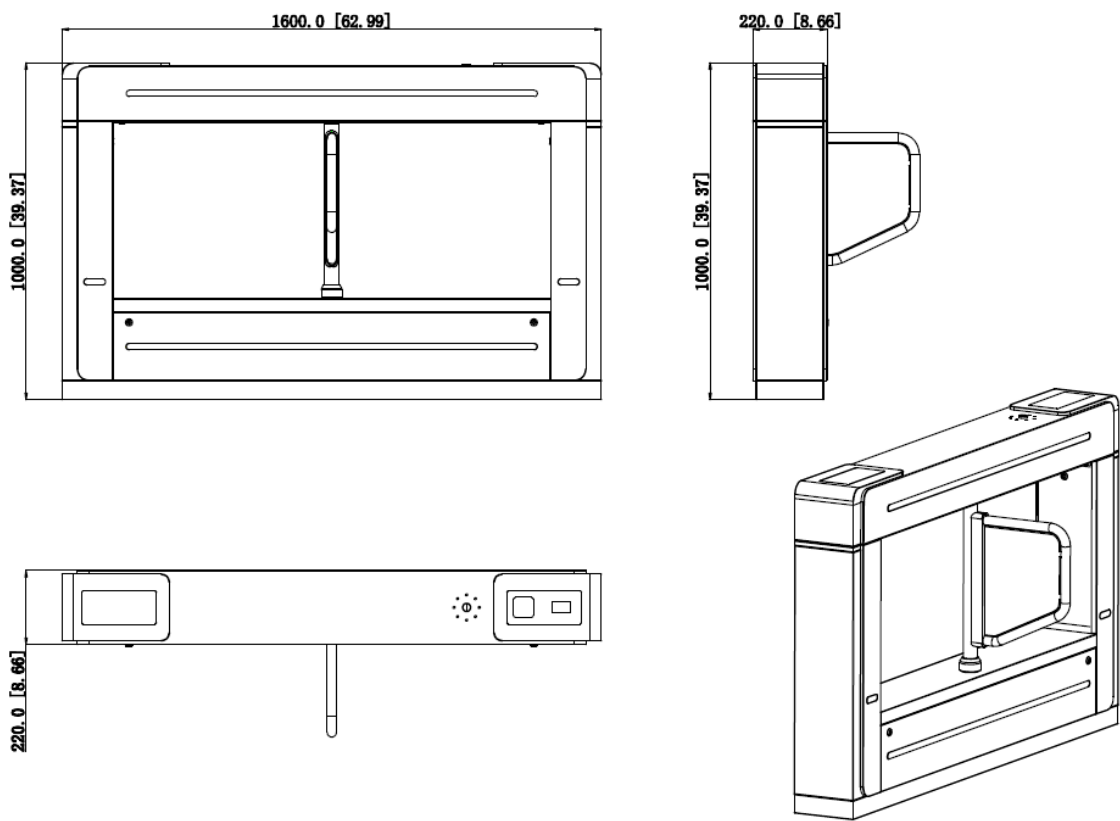
Figure 3-1 Appearance (1)

Figure 3-2 Appearance (2)

3.2 Dimensions

Figure 3-3 Dimensions (mm [inch])
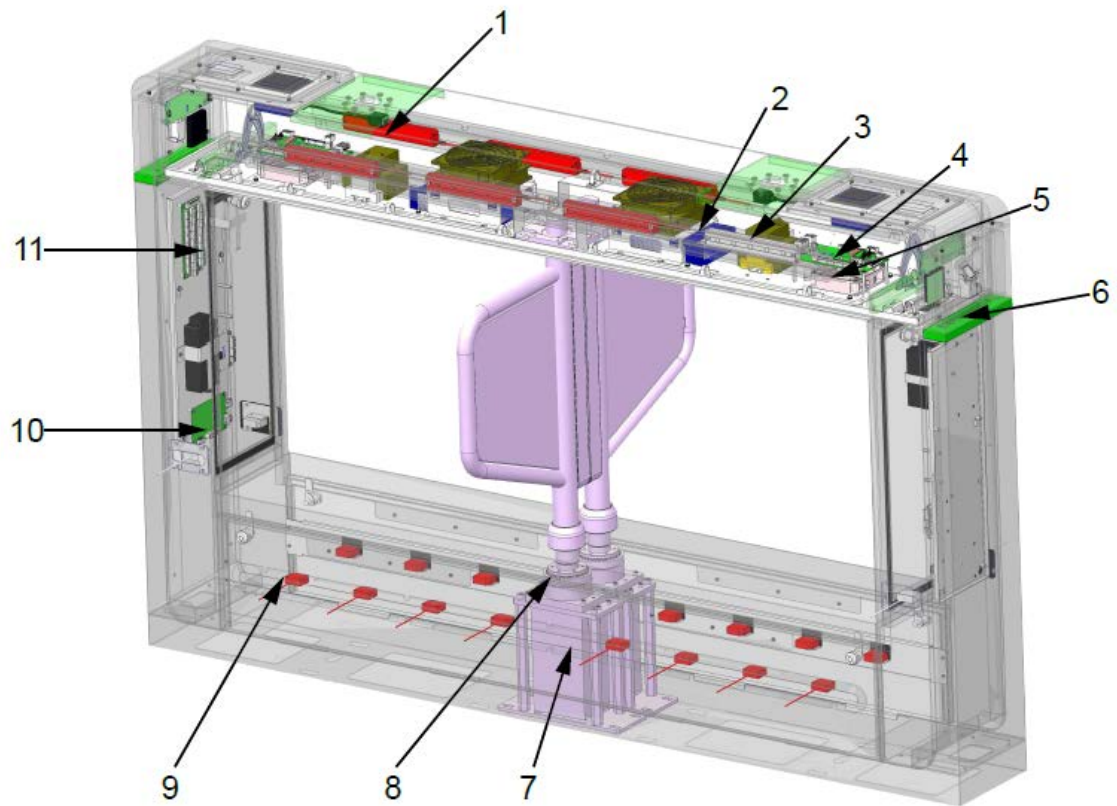
3.3 Inner Components

Figure 3-4 Inner components

Table 3-1 Inner components description

No.	Name	Description
1	Light curtain sensor	Collects the location information of passages.
2	24V power supply	Provides power for turnstile components and turnstile controllers.
3	Circuit breaker	If electric leakage and open circuit of electrical equipment occurs, circuit breaker is switched automatically to disconnect the turnstile from 220V alternating current power.
4	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.
5	Fan	Used for heat dissipation.
6	Passage indicator lights	● Green light glows: Authenticated, barriers locked. ● Green light flashes: Passage is allowed. ● Red light flashes: Turnstile abnormality or in alarm status. ● Blue light glows: Standby status.
7	Servo motor	Receives signals from the turnstile control panel to control the motor rotation and lock/unlock the turnstile.
8	Clutch	Used for emergency braking of barriers.
9	IR sensor	Collects the location information of passages.

No.	Name	Description
10	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.
11	IR adapter plate	Collects IR signals.

4 Installation

4.1 Safety Instructions

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- 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 disassembling the turnstile, disconnect the turnstile from power source first.
- The turnstile consists of various mechanical and electrical devices, any neglect during installation might cause damages.
- If smoke, unpleasant odor and noises come out, turn off the power, unplug the turnstile, and then contact the dealer or service center.
- Do not disassemble the turnstile cover unless it is necessary; otherwise human and property damage might occur.

⚠️

- Install the turnstile securely.
- 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.
- Do not stand in the lane to operate after the turnstile is powered on.

4.2 Before Installation

- Make sure that the ground where the turnstile is installed is flat and stable.
- Build a concrete base (above 100 mm high) when the turnstile is installed at places that are likely to be affected by higher humidity and standing water. 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 end of the PVC pipe above the ground to prevent water from seeping into the pipe.
- Keep the installation ground dry.

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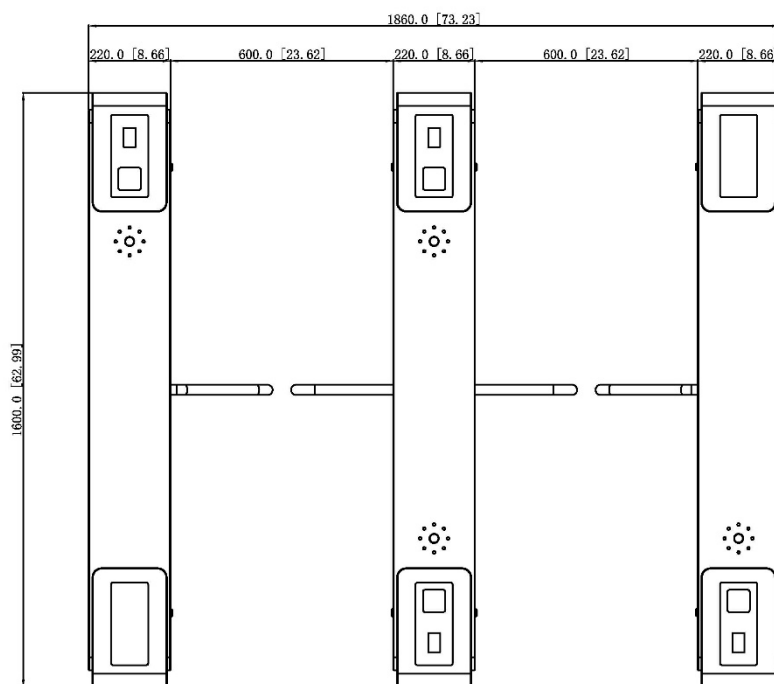
4.2.1 Tools

Tools might vary according to installation grounds.

- 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

  Because the marble and ceramic ground is relatively fragile, use pistol drill to drill holes on marble and ceramic ground, and then use percussion drill to make the holes deeper.

4.2.2 Cabling

- Before laying cables, check that the cable labels are clearly 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 the installation base.

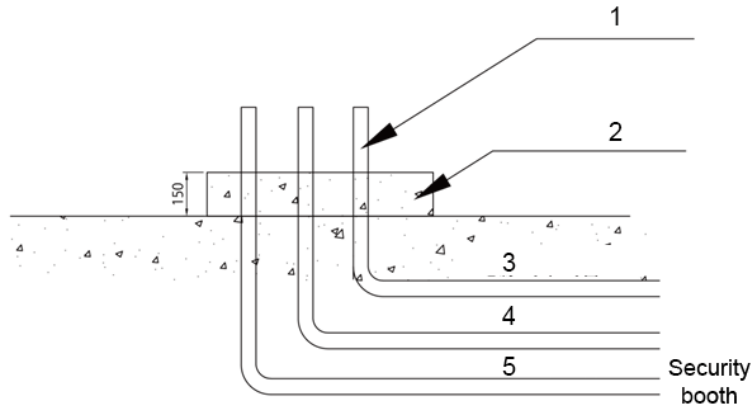Figure 4-2 PVC pipe layout (mm)

Table 4-1 PVC pipe layout description

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

Figure 4-3 Cable connection
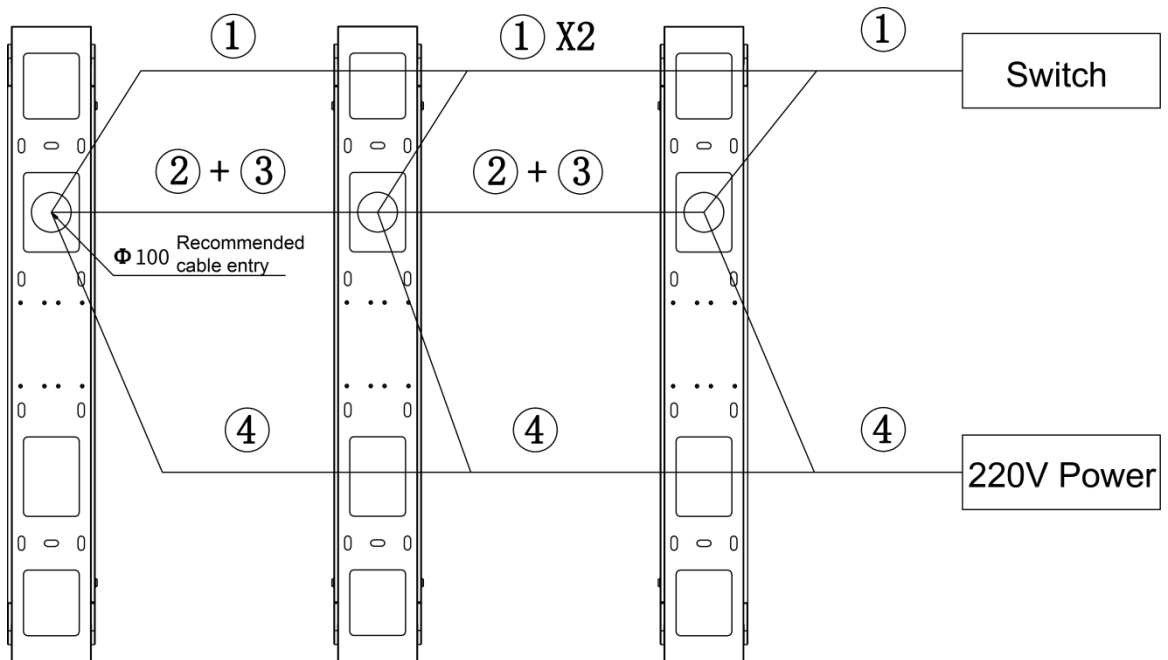
Table 4-2 Cable connection

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])
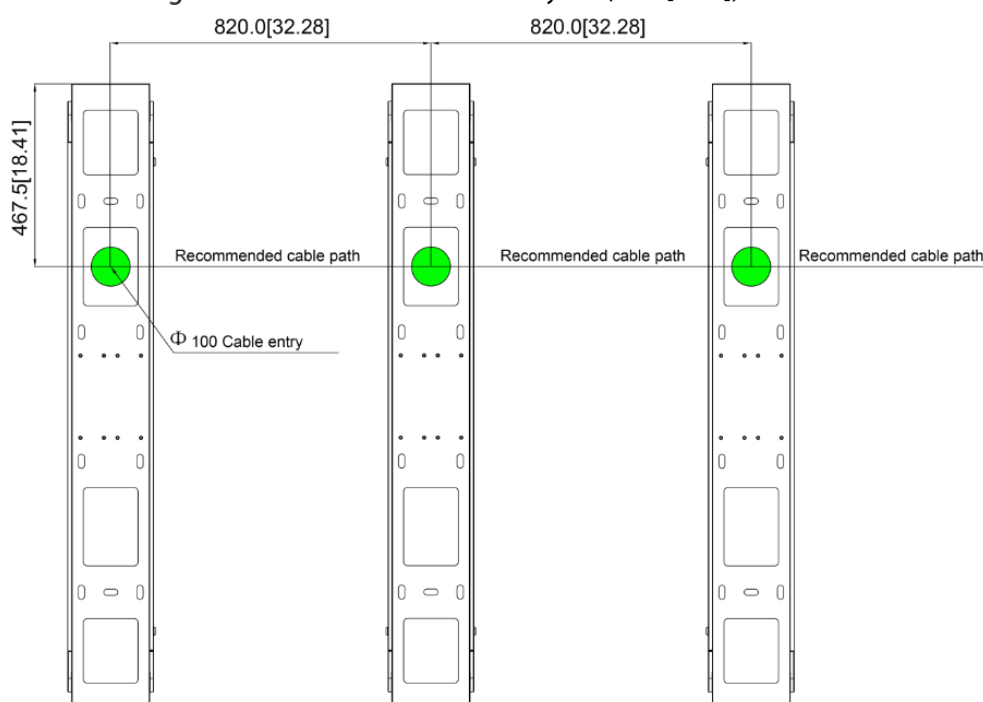
Figure 4-5 Wrong cable layout
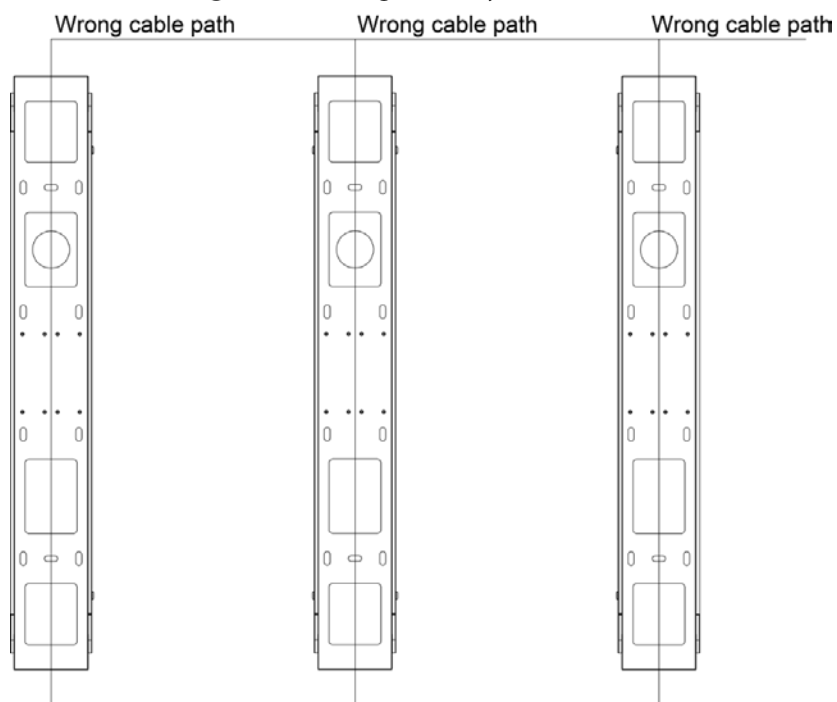
4.3 Installation Procedure

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
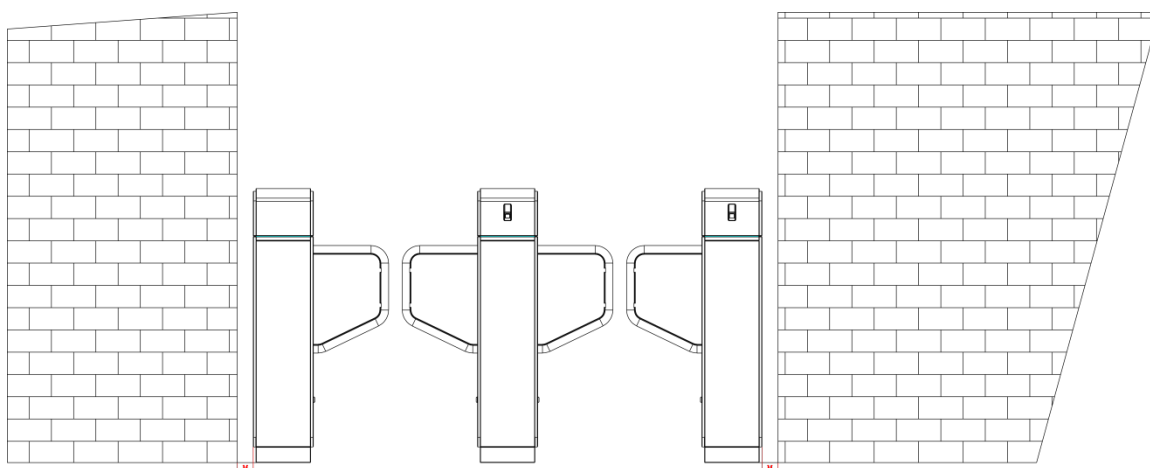
Step 1   Draw four turnstile installation holes.

Figure 4-7 Hole drilling diagram (mm [inch])
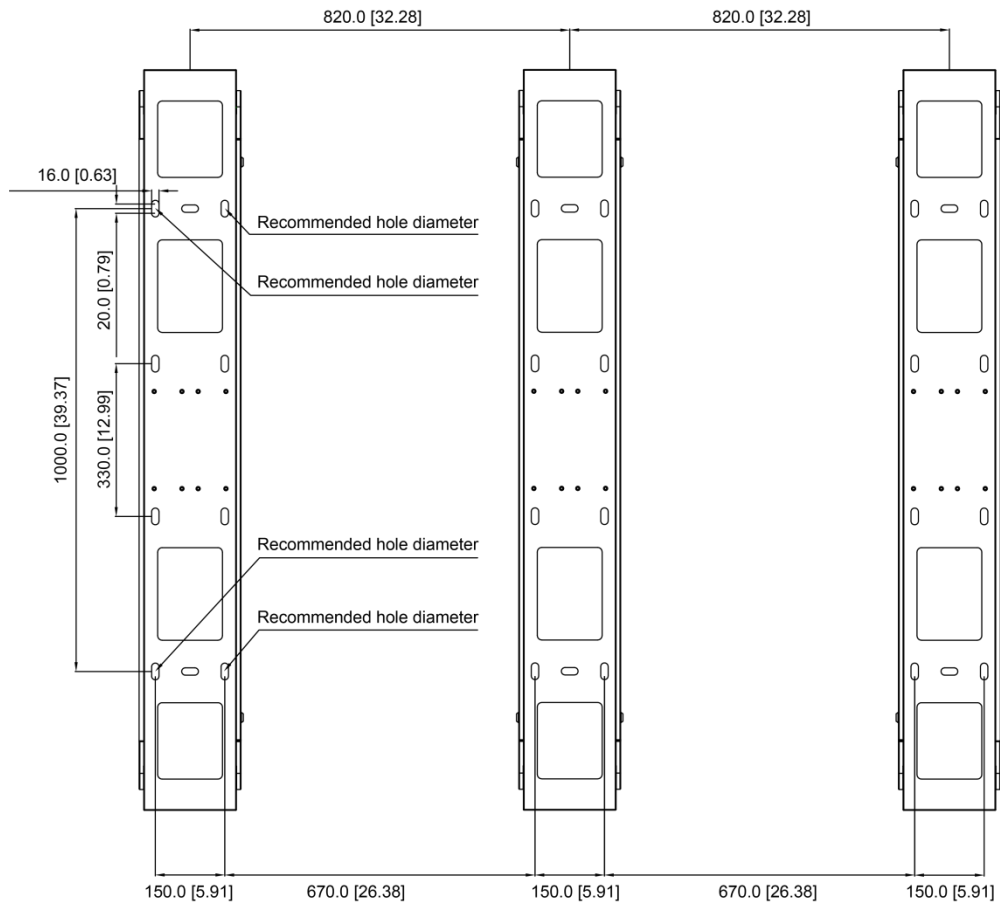
Step 2 Drill holes on the installation surface (like cement).

Table 4-3 Expansion bolt specification

Parameter	Dimensions
Expansion 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 bolt into the hole bottom.
Step 5 Tighten the nut of the 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.

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- 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
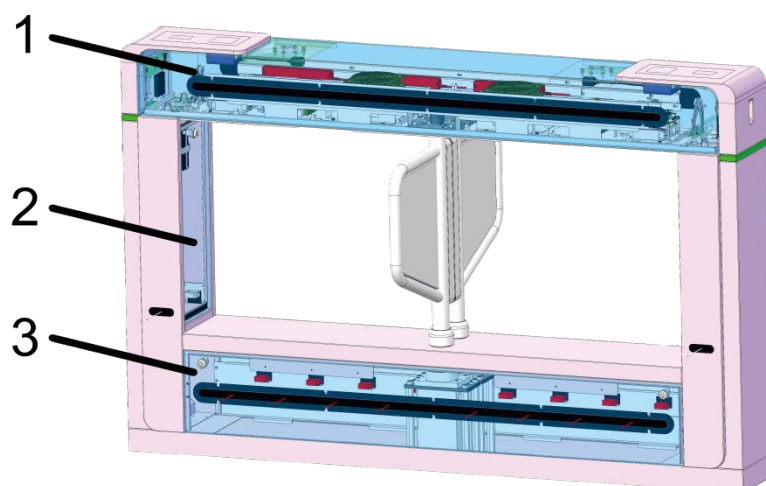
Table 4-4 Turnstile cabinet doors

No.	Name
1	Upper cover
2	Side panel
3	Bottom cover

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

Figure 4-9 Cable entry

Cable entry   (4-8) Expansion bolts
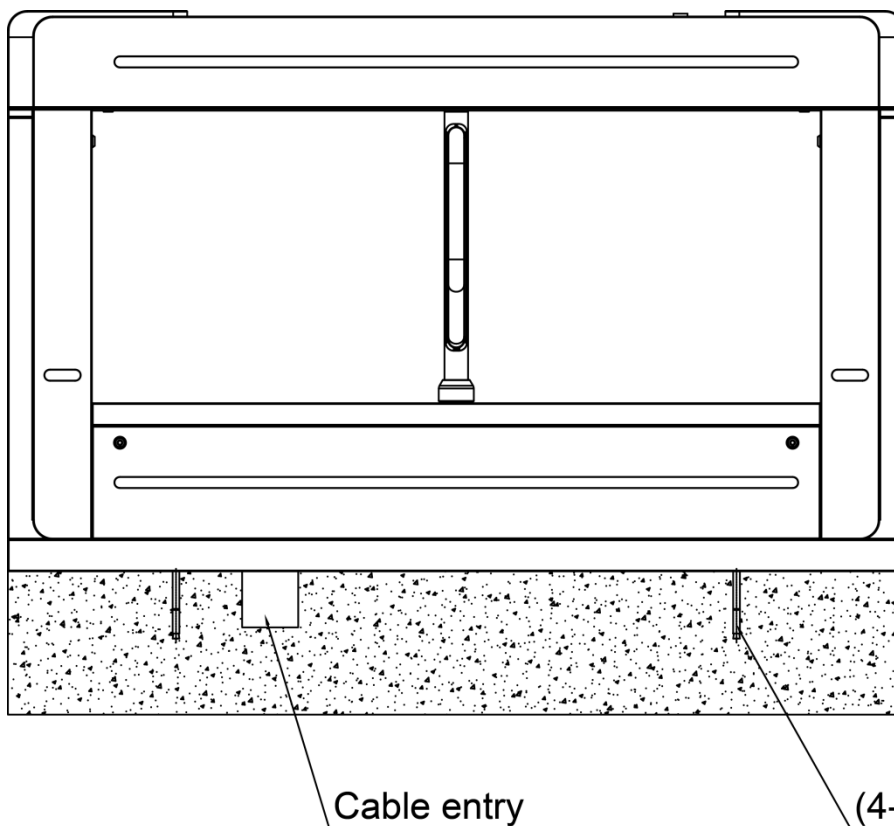
Step 3   Lift the turnstile, adjust its position, make the holes in the turnstile overlap with the expansion bolt, and then place the turnstile on the ground.

Step 4 Use a gradienter to measure angles of inclination of the ground where the turnstile is installed. The flatness tolerance requirement must be met as shown below.

Figure 4-10 Ground flatness tolerance
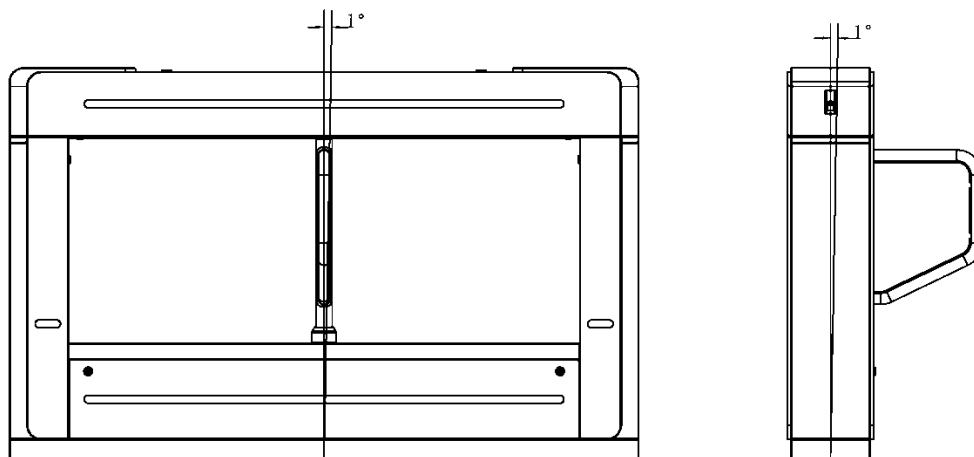
Step 5 Repeat Step 1–Step 4 to install other turnstiles.

- Arrows on the inner cover of the turnstile must point to the same direction.
- Make sure that height difference and parallelity difference of turnstiles are within the appropriate range.

Figure 4-11 Upper cover direction

Direction label
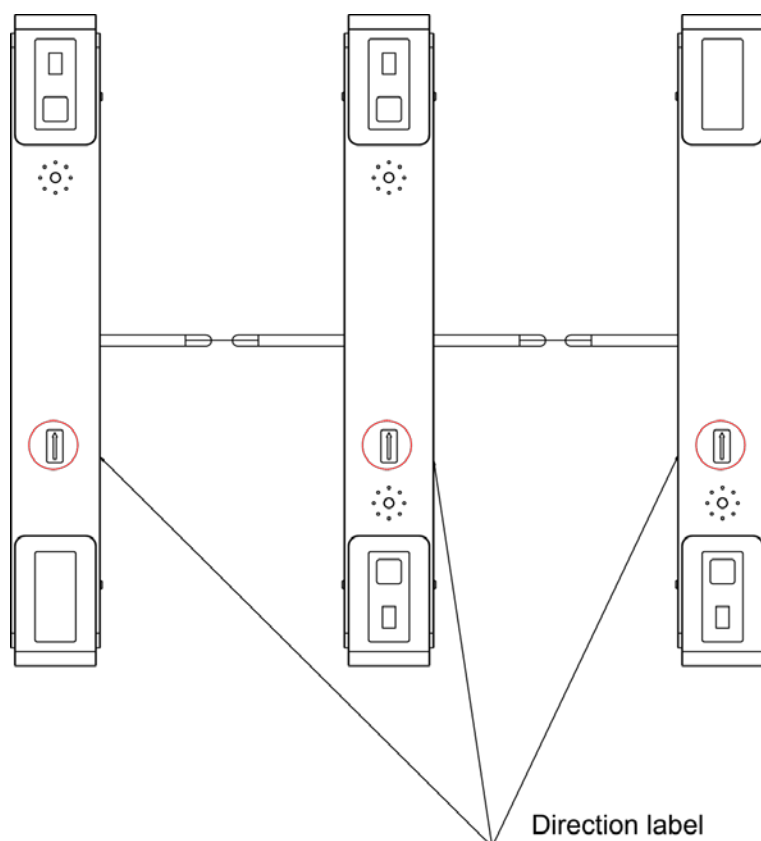
Figure 4-12 Light curtain connector location

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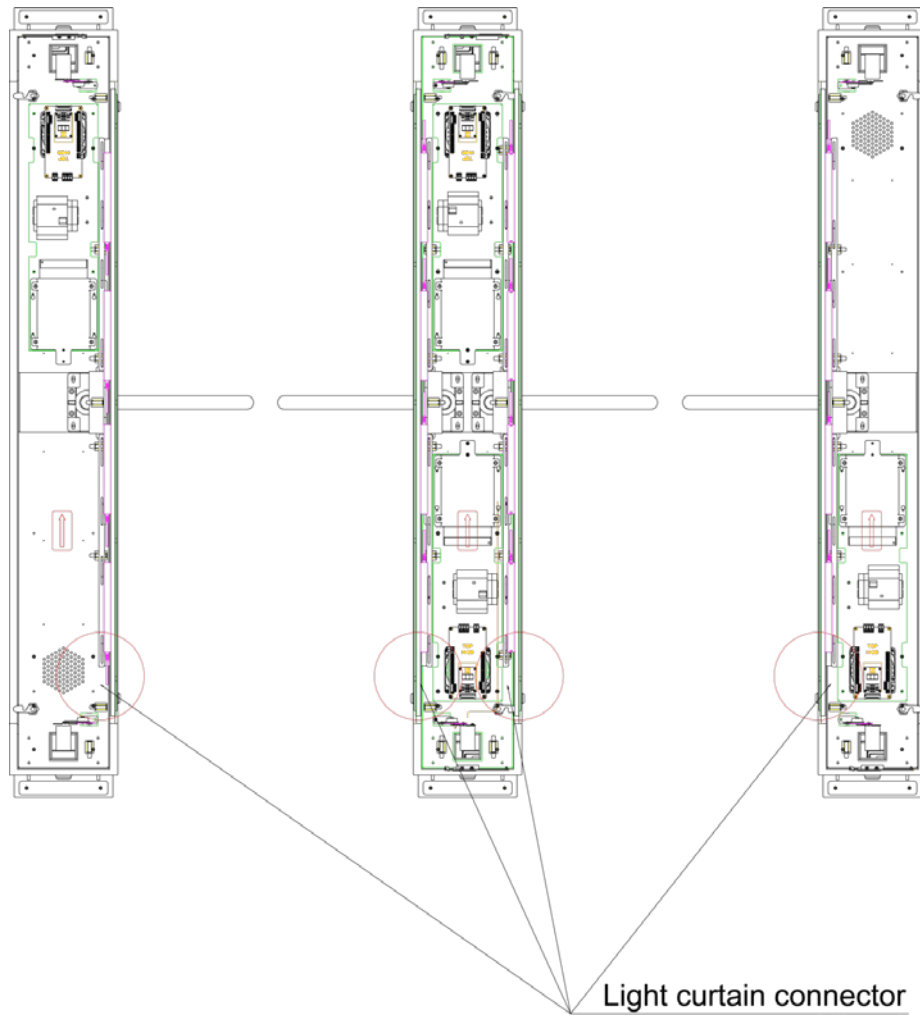
Figure 4-13 Height difference (mm [inch])

2.0±2.0 [0.08±0.08]
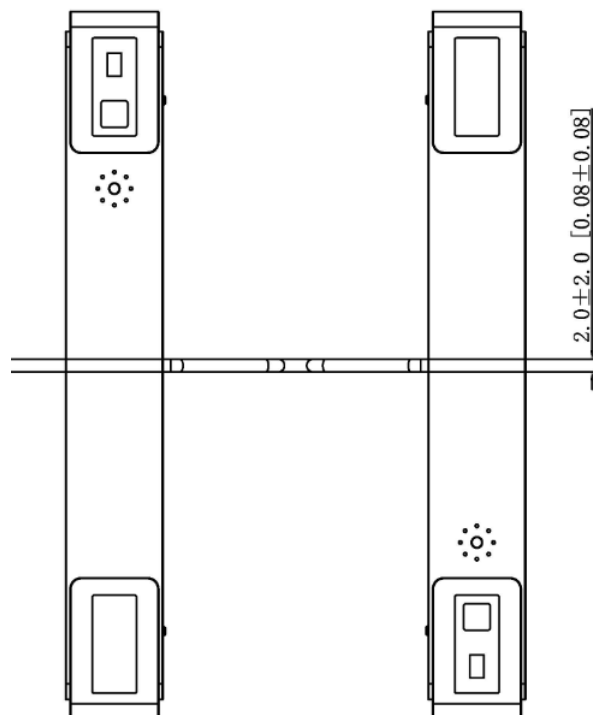
Figure 4-14 Parallelity difference (mm [inch])

600.0±2.0 [23.62±0.08]

600.0±2.0 [23.62±0.08]
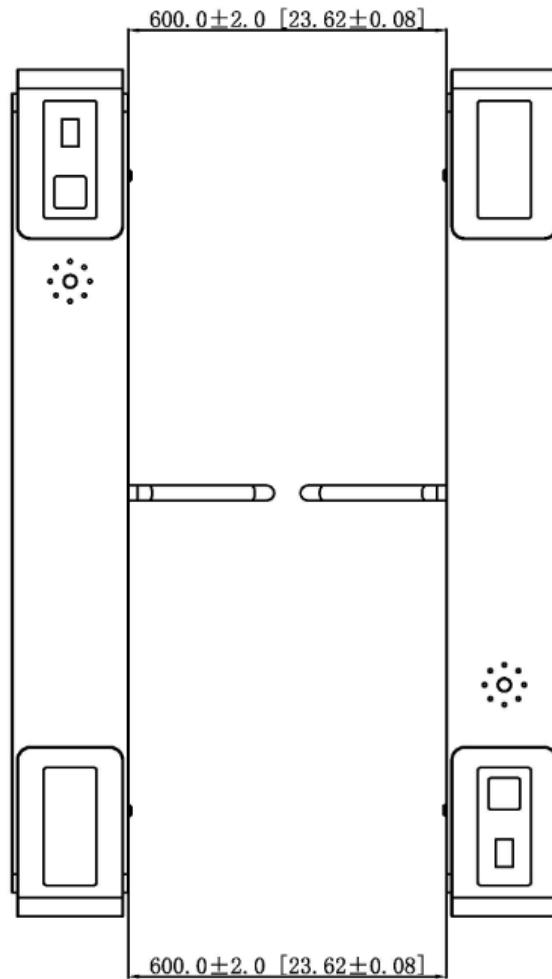
4.3.3 Fixing Turnstiles

Step 1　After adjustment, put M10 surface gasket, M10 spring gasket, and M10 nut on the expansion bolt, and then tighten the nut manually.

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

M12 hexagon nut

M12 spring gasket

M12 flat gasket

Expansion bolt
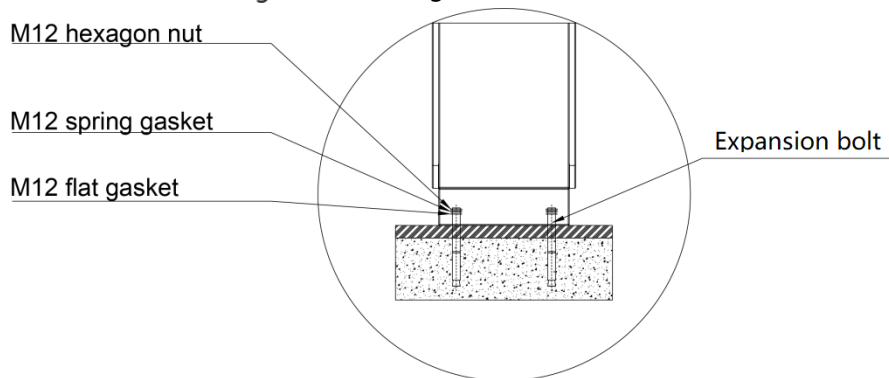
4.3.4 Installing Swing Barriers

<u>Step 1</u>   Disassemble the swing barriers.

Figure 4-16 Disassemble the swing barriers
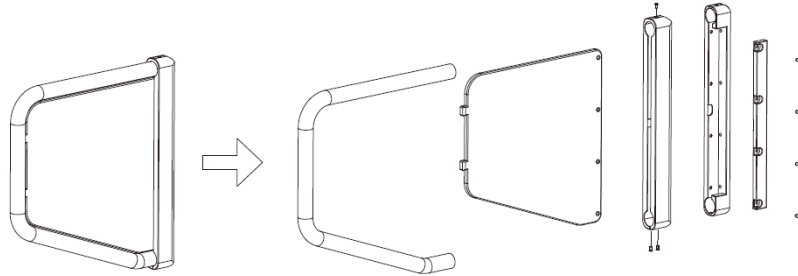
<u>Step 2</u>   Fasten the fixing panel of the swing barrier to the main shaft with four hexagon socket screws.

Figure 4-17 Fasten the fixing panel
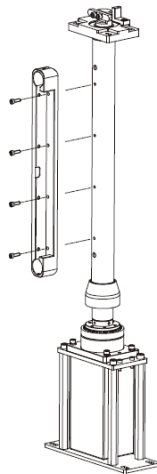
<u>Step 3</u>   Insert the transparent panel into the metal frame, insert them into the fixing panel of the swing barrier, and then secure them with two M8 hexagon socket screws.

Figure 4-18 Secure the swing arm
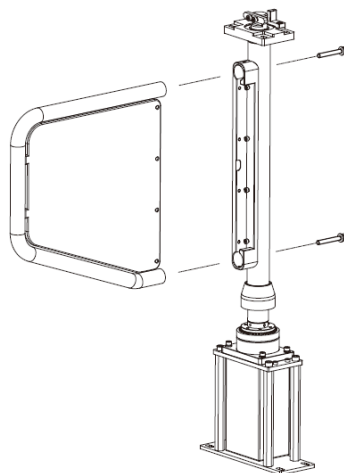
Step 4   Secure the transparent panel by fastening the fixing panel of the transparent swing with four
          hexagon socket screws.

Figure 4-19 Secure the fixing panel of the transparent swing
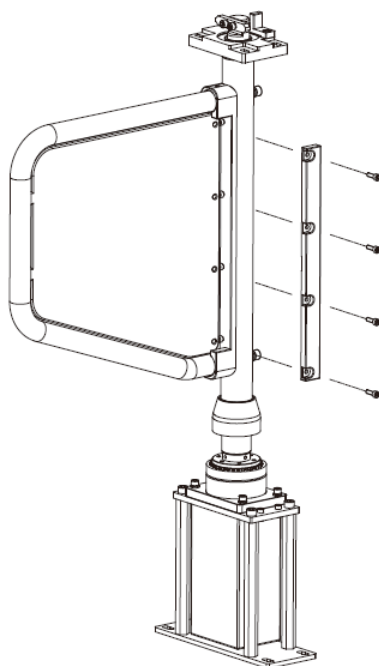
Step 5   Insert the housing into the fixing panel of the swing barrier.

Figure 4-20 Insert the housing
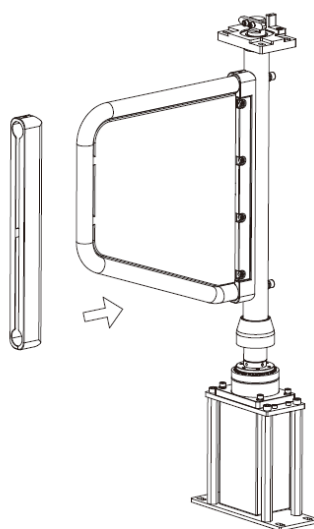
Step 6   Fasten the housing with two M3 countersunk screws.

Figure 4-21 Fasten the housing
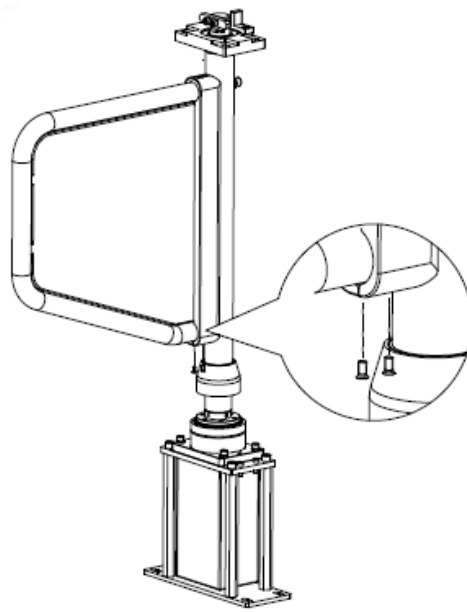
5 Cable Connection

5.1 Turnstile Control Panel Port Description

Figure 5-1 Turnstile control panel port
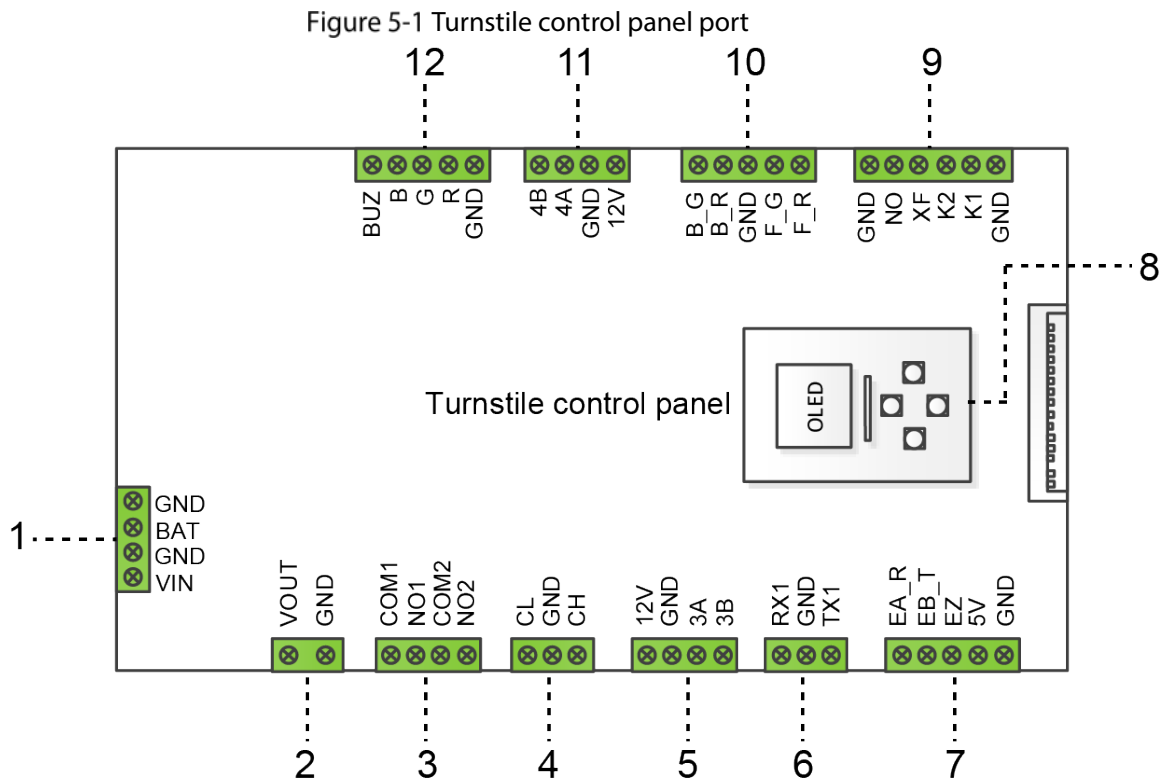
Table 5-1 Turnstile control panel port description

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.

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

5.3 Face Recognition Terminal (One-way Face Unlock & Two-way Card Unlock)

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- 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.

Figure 5-3 Face recognition terminal of ASI7/8 series cable connection (1)
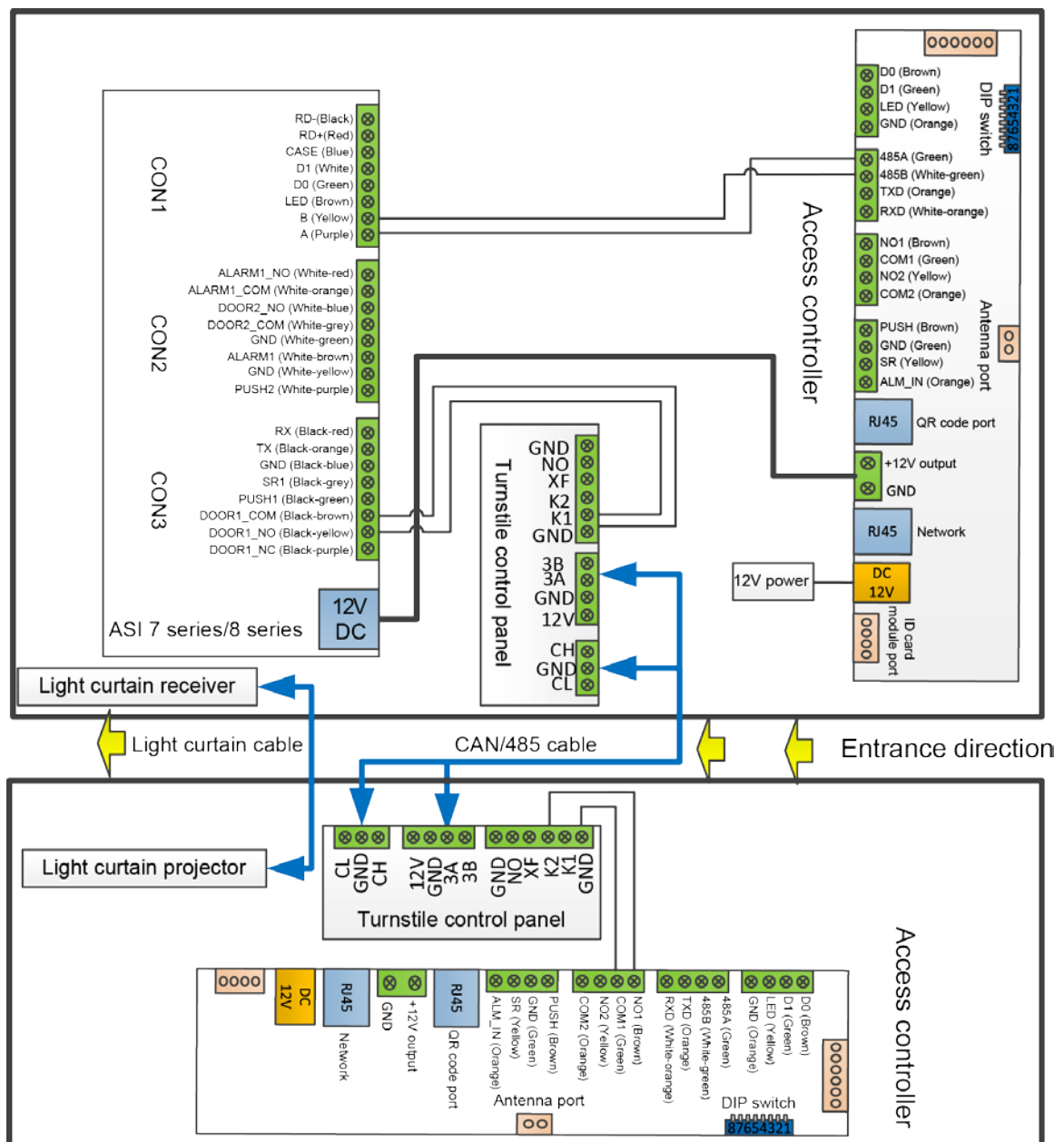
5.4 Face Recognition Terminal (Two-way Face Unlock & Two-way Card Unlock)

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Set the DIP switch of the face recognition access controller to 0000001.

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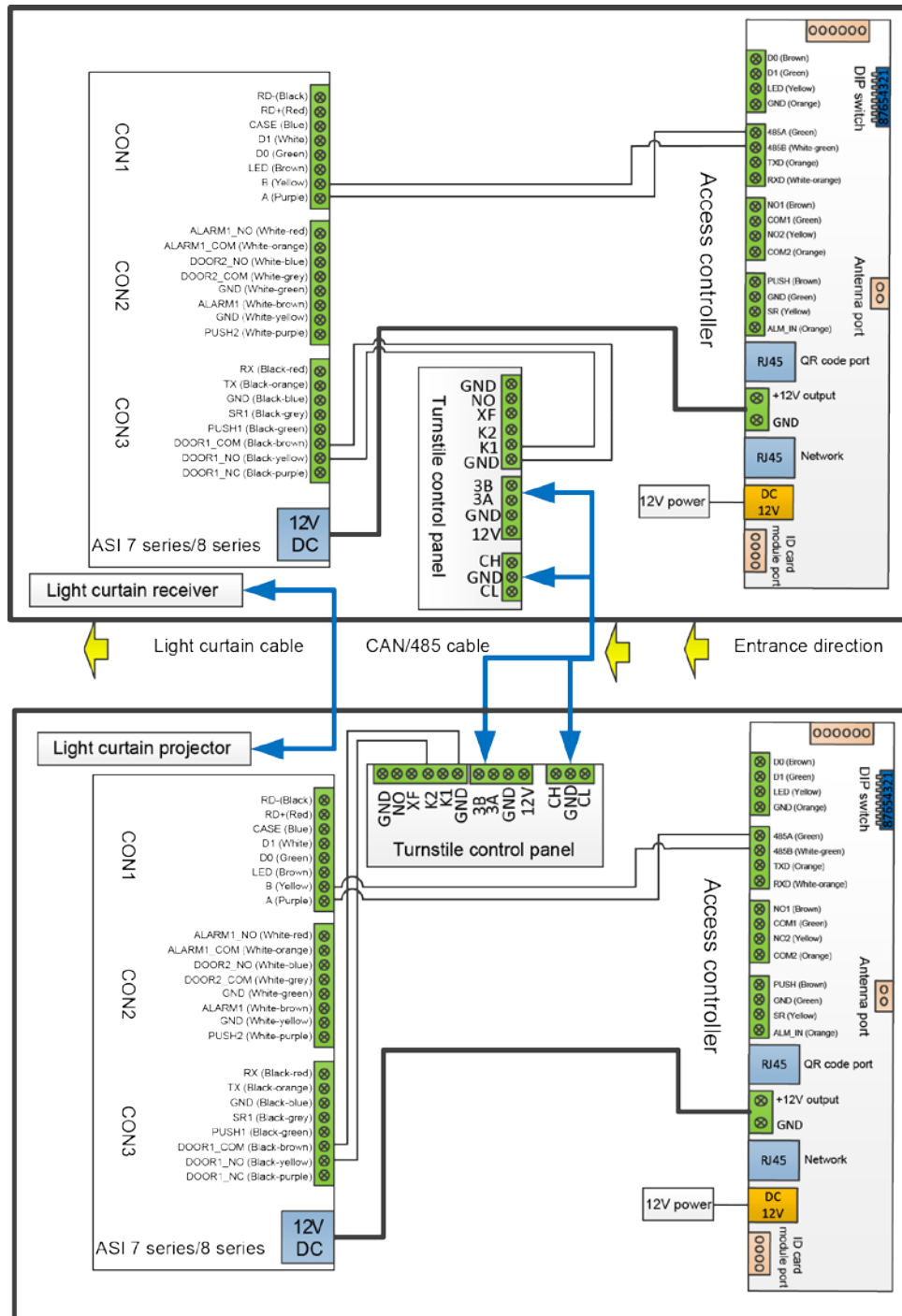
6 Configuration and Commissioning

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
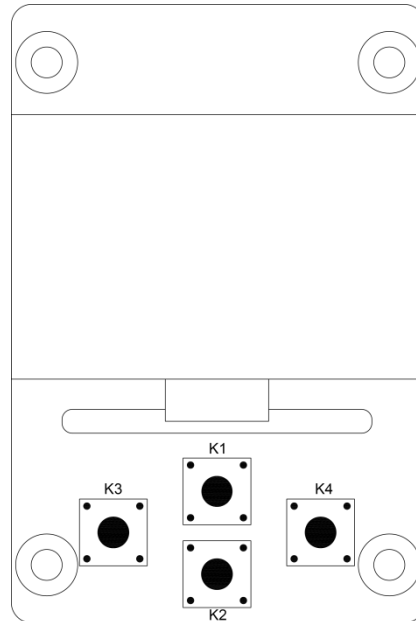
Table 6-1 Button description

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 required when entering and exiting from an area (default mode).
- Identity verification is required when entering an area, and identity verification is not required when exiting the area.
- Identity verification is required when entering an area, and exiting the area is not allowed.
- Identity verification is not required when entering an area, and identity verification is required when exiting the area.
- Identity verification is not required when entering and exiting an area.
- Identity verification is not required when entering an area, and exiting the area is not allowed.
- Entry to an area is not allowed, and identity verification is required when exiting the area.
- Entry to an area is not allowed, and identity verification is not required when exiting the area.
- Entering and exiting an area are not allowed.

6.1.4 Passage Duration Settings

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

The following passage duration options are available:

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

6.1.5 Lock Delay Settings

Lock barriers a certain period later than the passage duration.

The following lock delay duration options are available:

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

6.1.6 Security Level Settings

- Level 1: Tailgating and opposite direction intrusion are allowed and light alarm will be triggered. The barrier will not be locked in both normally open mode and normally closed mode.
- Level 2: Tailgating and opposite direction intrusion 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.
- Level 3: Tailgating 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.
- Level 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.

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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.
Turnstile type	Swing barrier or wing barrier.

Menu	Information
Barriers material	Acrylic or stainless steel.
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

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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.

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   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.

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   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
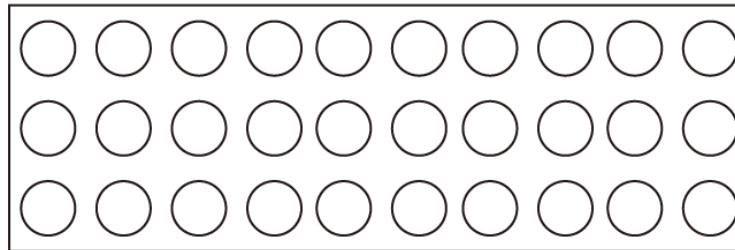
- The hollow circle indicates untriggered status and the solid circle indicates triggered status.
- The first row is an IR indication. Each dot corresponds to an IR, from left to right, IR 1, IR 2 ... IR 10.
- The second and the third rows are light curtain indication, and every 5 dots correspond to 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
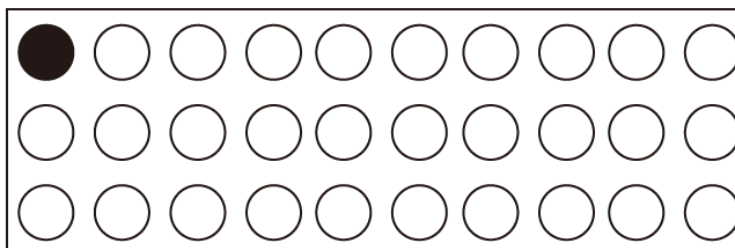
  ◇ If light curtain 1 is blocked, the light curtain status is shown as Figure 6-4.

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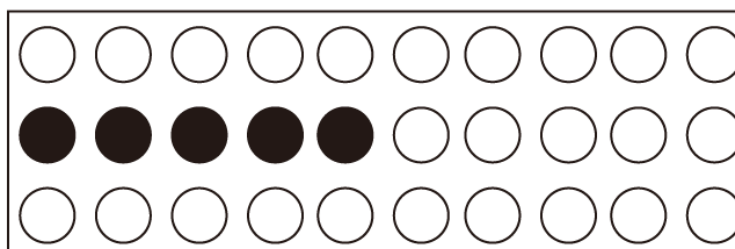
7 FAQ

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 passes 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 of the Turnstile

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

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- Do not spray water onto the turnstile. You can only wipe the turnstile with water and other neutral liquids.
- Do not clean the exterior of the turnstile with hard objects.
- Do not wipe and spray the turnstile with chlorine-containing disinfectant.

Turnstile Exterior

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- Maintenance cycle: We recommend you maintain the turnstile once a month; if the turnstile is installed near the seaside or chemical companies, maintenance once a week is recommended.
- Cut off the power supply of the turnstile first before you clean the turnstile. Do not wet the parts of turnstile during cleaning.
- To avoid damages to the brushed metal surface, the cleaning agent must not contain granular abrasives.
- Maintenance steps:
1. Clean the surface of the cabinet with the non-woven cloth moistened with water or other neutral liquids.
2. After cleaning, use stainless steel maintenance agent to wipe and maintain the whole turnstile.
- Rust removal steps:
1. Wipe clean the surface of the turnstile with a scouring pad.
2. After spraying the rust remover (WD 40 is recommended) onto the surface, leave it for 5 minutes.
3. Use a scouring pad to wipe the rust spots along the brushing direction.
4. After rust removal, use stainless steel maintenance agent to wipe and maintain the entire turnstile.

Turnstile Interior

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To avoid short circuit, do not clean the internal power supply and the circuit board with water.
- Maintenance cycle: Once every three months is recommended.
- Maintenance steps:
1. Cut off the power, open the cover of the turnstile, and remove the internal dust.
2. When the turnstile is installed outdoor with a face detection device, please check whether it is getting unglued. If it comes unglued, please clean the glue and refill the glue on a sunny day. If the card swiping area also becomes unglued, fix it with the same method.
3. Apply anti-rust lubricating grease on the surface of moving parts such as bearings and retaining ring (moving parts vary with different models).

4. Check whether the circuits, cables, and connector become exposed or loose. Wrap up, straighten or tighten them. If the wires are aging, replace them.
5. Check whether the swing door and the screws of the rotating shaft are loose. If they become loose, please tighten them.
6. Check whether the motor, bearings, fasteners, and drive shaft are all tightened securely. If they are loose, please tighten them.

Appendix 2 Cybersecurity Recommendations

Mandatory actions to be taken for basic device network security:

1. **Use Strong 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; character types include 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 overlapped characters, such as 111, aaa, etc.

2. **Update Firmware and Client Software in Time**
   - According to the standard procedure in Tech-industry, we recommend to keep your device (such as NVR, DVR, IP camera, etc.) firmware up-to-date to ensure the system is equipped with the latest security patches and fixes. When the device is connected to the public network, it is recommended to enable the "auto-check for updates" function to obtain timely information of firmware updates released by the manufacturer.
   - We suggest that you download and use the latest version of client software.

"Nice to have" recommendations to improve your device network security:

1. **Physical Protection**

   We suggest that you perform physical protection to device, especially storage devices. For example, place the device in a special computer room and cabinet, and implement well-done access control permission and key management to prevent unauthorized personnel from carrying out physical contacts such as damaging hardware, unauthorized connection of removable device (such as USB flash disk, serial port), etc.

2. **Change Passwords Regularly**

   We suggest that you change passwords regularly to reduce the risk of being guessed or cracked.

3. **Set and Update Passwords Reset Information Timely**

   The device supports password reset function. Please set up related information for password reset in time, including the end user's mailbox and password protection questions. If the information changes, please modify it in time. When setting password protection questions, it is suggested not to use those that can be easily guessed.

4. **Enable Account Lock**

   The account lock feature is enabled by default, and we recommend you to keep it on to guarantee the account security. If an attacker attempts to log in with the wrong password several times, the corresponding account and the source IP address will be locked.

5. **Change Default HTTP and Other Service Ports**

   We suggest you to change default HTTP and other service ports into any set of numbers between 1024–65535, reducing the risk of outsiders being able to guess which ports you are using.

6. **Enable HTTPS**

   We suggest you to enable HTTPS, so that you visit Web service through a secure communication channel.

7. **MAC Address Binding**

   We recommend you to bind the IP and MAC address of the gateway to the device, thus reducing

the risk of ARP spoofing.

8. **Assign Accounts and Privileges Reasonably**

   According to business and management requirements, reasonably add users and assign a minimum set of permissions to them.

9. **Disable Unnecessary Services and Choose Secure Modes**

   If not needed, it is recommended to turn off some services such as SNMP, SMTP, UPnP, etc., to reduce risks.

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

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

10. **Audio and Video Encrypted Transmission**

    If your audio and video data contents are very important or sensitive, we recommend that you use encrypted transmission function, to reduce the risk of audio and video data being stolen during transmission.

    Reminder: encrypted transmission will cause some loss in transmission efficiency.

11. **Secure Auditing**

    - Check online users: we suggest that you check online users regularly to see if the device is logged in without authorization.
    - Check device log: By viewing the logs, you can know the IP addresses that were used to log in to your devices and their key operations.

12. **Network Log**

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

13. **Construct a Safe Network Environment**

    In order to better ensure the safety of device and reduce potential cyber risks, we recommend:

    - Disable the port mapping function of the router to avoid direct access to the intranet devices from external network.
    - The network should be partitioned and isolated according to the actual network needs. If there are no communication requirements between two sub networks, it is suggested to use VLAN, network GAP and other technologies to partition the network, so as to achieve the network isolation effect.
    - Establish the 802.1x access authentication system to reduce the risk of unauthorized access to private networks.
    - Enable IP/MAC address filtering function to limit the range of hosts allowed to access the device.