ARMATURA

User Manual

Avalon Series Aesthetic Swing Barrier

Date: February 2025

Version: 1.0

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The product will be updated from time to time without prior notice. The latest operation procedures and relevant documents are available on http://www.armatura.us.

If there is any issue related to the product, please contact us.

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To know more about our global branches, visit www.armatura.us.

About the Manual

This manual introduces the operations of **Avalon-S1000 & Avalon-S1200**.

All figures displayed are for illustration purposes only. Figures in this manual may not be exactly consistent with the actual products.

Features and parameters with ★ are not available in all devices.

Safety Instruction

These instructions are intended to ensure that user can use the product correctly to avoid danger or property loss.

The precaution measure is divided into Dangers and Cautions:
Dangers: Neglecting any of the warnings may cause serious injury or death.
Cautions: Neglecting any of the cautions may cause injury or equipment damage.

Symbols

Convention	Description
	**Dangers:** Follow these safeguards to prevent serious injury or death.
	**Cautions:** Follow these precautions to prevent potential injury or material damage.

 **Dangers:**

- In the use of the product, you must be in strict compliance with the electrical safety regulations of the nation and region.
- The equipment must be connected to an earthed mains socket-outlet.
- Shock hazard! Disconnect all power sources before maintenance.
- Do not touch the bare metal contacts of the inlets after the circuit breaker is turned off. Electricity still exists.
- To prevent possible hearing damage, do not listen at high volume levels for long periods.
- All the electronic operation should be strictly compliance with the electrical safety regulations, fire prevention regulations and other related regulations in your local region.
- Please use the power adapter, which is provided by normal company. The power consumption cannot be less than the required value.
- Do not connect several devices to one power adapter as adapter overload may cause over-heat or fire hazard.
- Please make sure that the power has been disconnected before you wire, install or dismantle the device.
- If the top caps should be open and the device should be powered on for maintenance, make sure:

  a. Power off the fan to prevent the operator from getting injured accidentally.

b. Do not touch bare high-voltage components.

c. Make sure the switch's wiring sequence is correct after maintenance.

- Please make sure that the power has been disconnected before you wire, install or dismantle the device.
- If smoke, odors or noise rise from the device, turn off the power at once and unplug the power cable, and then please contact the service center.
- If the product does not work properly, please contact your dealer or the nearest service center. Never attempt to disassemble the device yourself. (We shall not assume any responsibility for problems caused by unauthorized repair or maintenance.)
- The Terminal PE of the switch should be connected to a ground wire.

Cautions:

- Instructions must be read before installation. Please follow these instructions carefully, incorrect installation could affect gate operation.
- When mounting and positioning this product please ensure the power cable is unplugged.
- The motor cover will need to be removed to mount the motor to the mounting plate. Electrical-related operation of the main unit can only be made by a licensed electrician.
- To prevent injury, this equipment must be securely attached to the floor/base of the turnstile in accordance with the installation instructions.
- Keep straight down when moving or using the equipment.
- Never place the equipment in an unstable location. The equipment may fall, causing serious personal injury or death.
- Stainless steel may be corroded in some circumstances. You need to clean and care the device by using the stainless steel cleaner. It is suggested to clean the device every month.
- Do not drop the device or subject it to physical shock, and do not expose it to high electromagnetism radiation. Avoid the equipment installation on vibrations surface or places subject to shock (ignorance can cause equipment damage).
- Do not place the device in extremely hot (refer to the specification of the device for the detailed operating temperature), cold, dusty or damp locations, and do not expose it to high electromagnetic radiation.
- The device cover for indoor use shall be kept from rain and moisture.
- Exposing the equipment to direct sun light, low ventilation or heat source such as heater or radiator is forbidden (ignorance can cause fire danger).
- Do not aim the device at the sun or extra bright places. A blooming or smear may occur otherwise (which is not a malfunction however), and affecting the endurance of sensor

at the same time.

- Please use the provided glove when open up the device cover, avoid direct contact with the device cover, because the acidic sweat of the fingers may erode the surface coating of the device cover.
- Please use a soft and dry cloth when clean inside and outside surfaces of the device cover, do not use alkaline detergents.
- Please keep all wrappers after unpack them for future use. In case of any failure occurred, you need to return the device to the factory with the original wrapper. Transportation without the original wrapper may result in damage on the device and lead to additional costs.
- Improper use or replacement of the battery may result in hazard of explosion. Replace with the same or equivalent type only. Dispose of used batteries according to the instructions provided by the battery manufacturer.
- Biometric recognition products are not 100% applicable to anti-spoofing environments. If you require a higher security level, use multiple authentication modes.
- Do not stay in the lane when the device is rebooting.
- RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.
- SUITABLE FOR MOUNTING ON CONCRETE OR OTHER NON-COMBUSTIBLE SURFACE ONLY.
- The instructions shall require connection of the equipment protective earthing conductor to the installation protective earthing conductor.

Table of Contents

1. Overview

The Avalon Series Swing Barrier represents a pinnacle of access control engineering, integrating advanced CGL assembly technology with precision-engineered security solutions. Utilizing tempered glass and acrylic components, the barrier delivers superior structural integrity and sophisticated design. Equipped with ARMATURA core technology, it provides comprehensive security through multi-layered detection systems, including infrared, mechanical, and electric current monitoring.

Designed for high-performance environments, the Avalon Series offers customizable authentication methods, dynamic lighting interfaces, and modular configurations. Its innovative architecture ensures seamless integration into premium facilities, balancing cutting-edge technological functionality with elegant, minimalist aesthetics.

1.1 Features

1.1.1 Key Features

Innovative Structure

- The design incorporates CGL assembly technology, which draws inspiration from ancient joinery techniques. This innovative approach significantly reduces the need for screws, creating a more seamless and efficient assembly process.
- ARMATURA core technology for advanced swing arm control.

Advanced Detection

- 12 pairs of military-grade infrared sensors with matrix-style photoelectric 3D detection. Anti-tailgating, anti-reverse entry, and anti-clamping functionalities.

Safety-Oriented Design

- Rounded edges for user safety.
- Multi-layer anti-clamping system (infrared, mechanical, and electric current detection).

User-Friendly Operation

- Configurable passage modes: Controlled, Free, or Prohibited Passage.
- Automatic reset and passage memory for up to 255 requests.
- Direction indicators and status lights for easy navigation.

Multiple Authentication Options

- Supports RFID, QR Code, Mobile Credentials, Fingerprint, Palm Recognition, and Facial Recognition.
- Multi-factor authentication combinations are available for enhanced security.

Disabilities Friendly

- Wide walkway options (up to 35.43” (900mm)) for wheelchair access or easier mobility.
- Accommodates wheelchair or child passage management with side-mounted RFID and QR code readers.

1.1.2 Performance & Safety Features

Power-On Self-Test

- Automatically detects hardware and functional issues at startup.

Power-Off Fail-Safe

- Swing arms unlock during power failure for emergency evacuation.

Anti-Clamping Functionality

- Infrared Detection

  Prevents collisions by detecting objects or individuals in the swing arm area.

- Mechanical Detection

  Stops movement if the swing arm encounters an obstacle.

- Electric Current Detection

  Monitors collision force to ensure it stays within a safe range.

1.1.3 User Guidance

Illuminated Indicators

- Direction and passage status lighting (green for open, red for blocked).
- Flowing green lights for an intuitive experience.

Ambient Lighting

- Sci-fi lighting design to enhance aesthetics and guide users.

1.1.4 Emergency Features

- Emergency Mode

  Doors unlock automatically during power failure or fire alarm activation.

- Anti-Panic Functionality

  Swing arms can be manually pushed open during emergencies.

1.1.5 Certifications

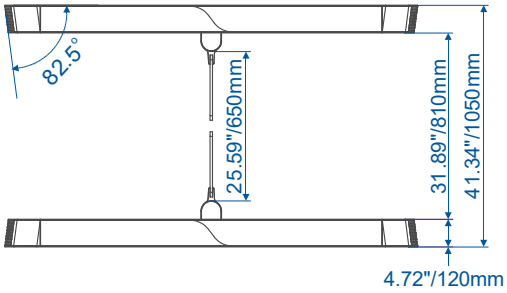
- CE, FCC Certified (Compliant with international safety and quality standards)

1.2 Appearance

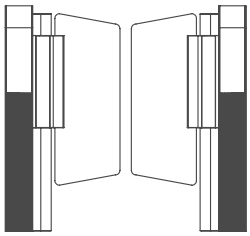
Avalon-S1000

Unit: inch/mm

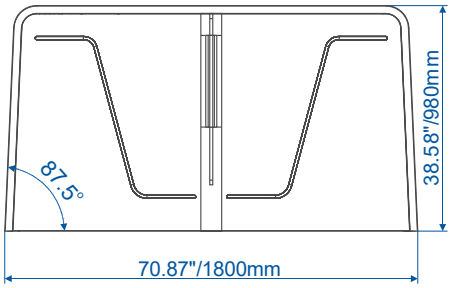
Top View



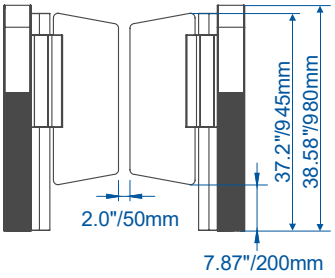
Side View



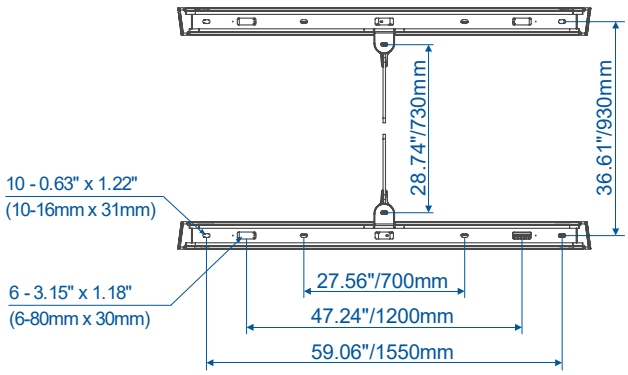
Front View



Side View



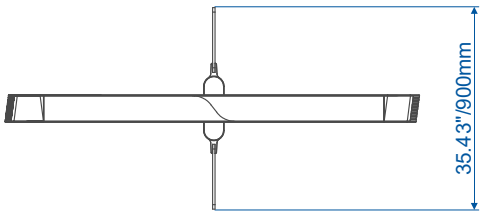
Bottom View



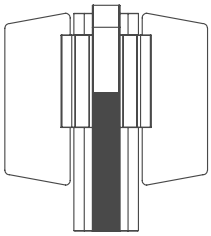
Avalon-S1200

Unit: inch/mm

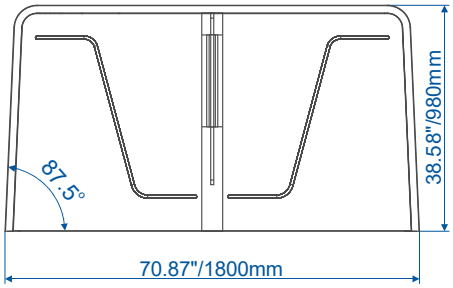
Top View



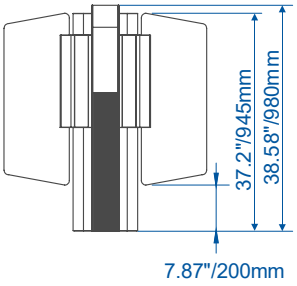
Side View



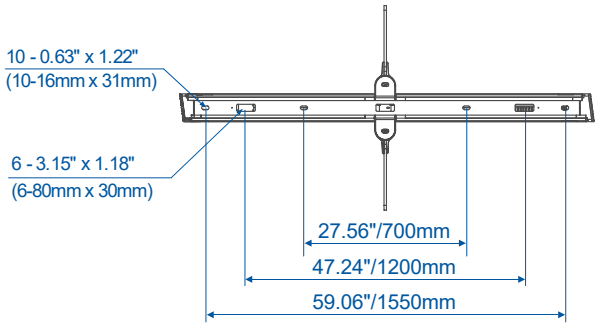
Front View



Side View



Bottom View

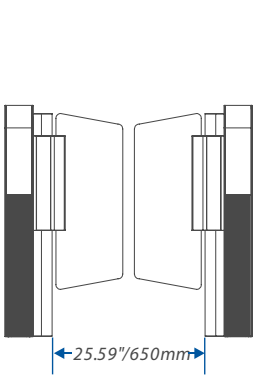


Swing Barriers Specifications

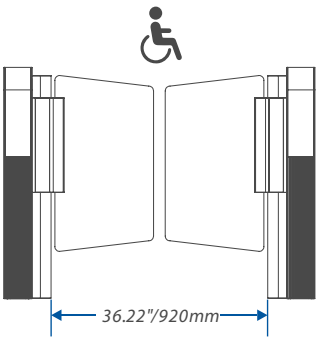
The Avalon-S1000 and Avalon-S1200 can be combined to form a single, dual or multi-lane system, and users can choose the appropriate combination according to actual needs. It should be noted that Avalon-S1200 needs to be used in conjunction with Avalon-S1000.

1. Single-lane

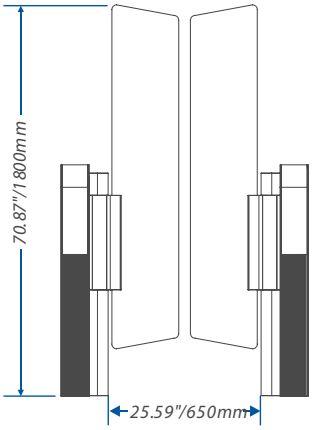
Unit: inch/mm



Standard Lane

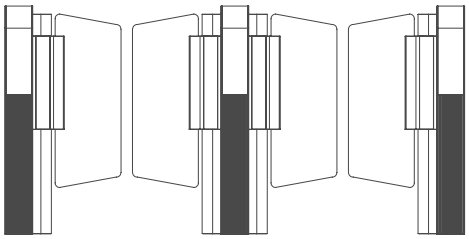


Wide Lane / ADA Lane

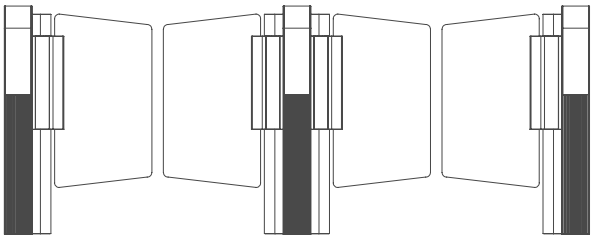


High-barrier Lane

2. Dual-lane

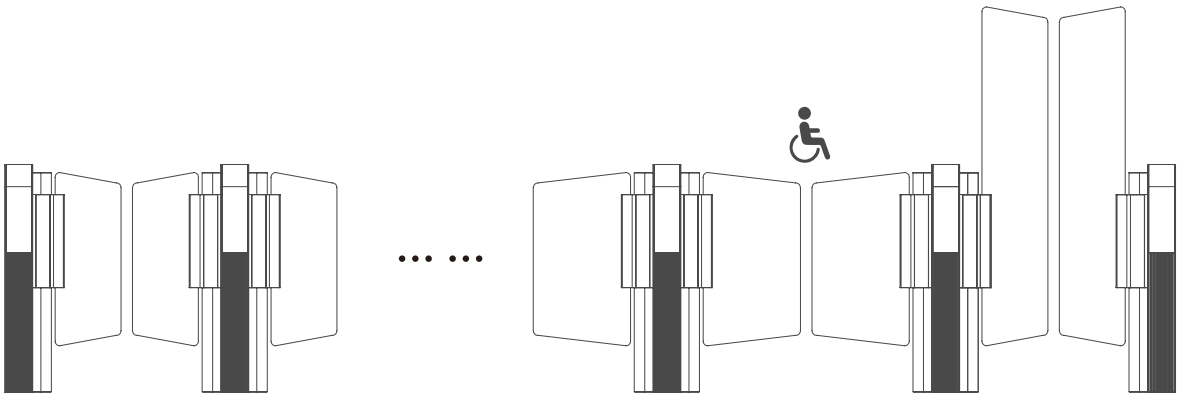


Standard Lane



Wide Lane / ADA Lane

3. Multi-lane

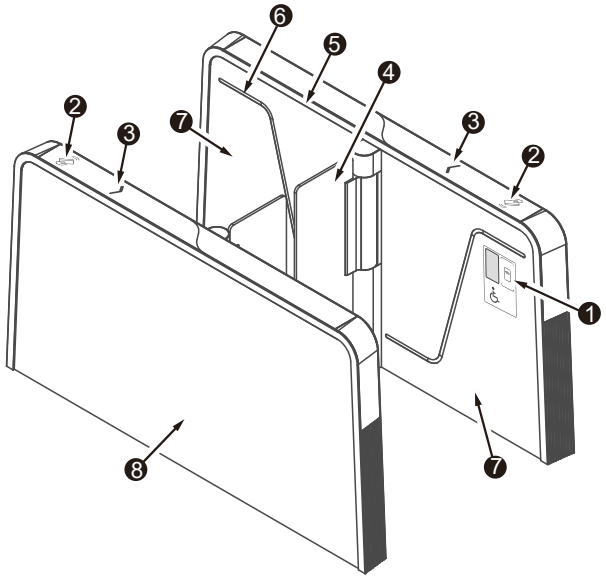


Standard Lane

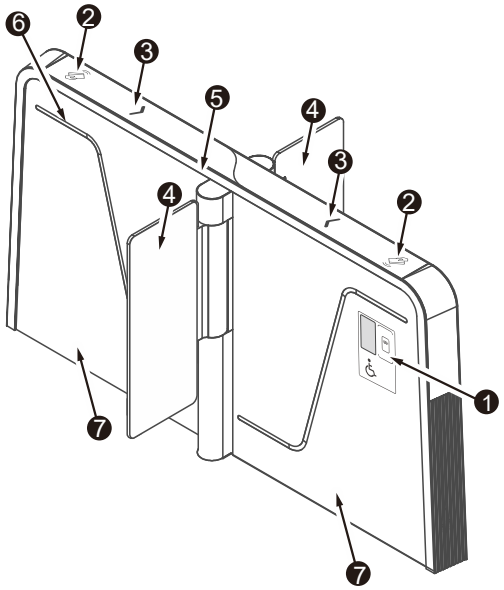
Wide Lane / ADA Lane

1.3 System Components

Avalon-S1000



Avalon-S1200



No.	Components	No.	Components
1	Convenient Verification Area*	5	Status Indicator
2	Verification Area	6	Infrared Sensor
3	Traffic Indicator	7	Maintenance Door
4	Barrier Material	8	Backboard

*This configuration provides an accessible design to accommodate individuals with mobility

limitations.

1.4 Technical Specifications

Internal Number	Avalon-S1000	Avalon-S1200
Audio Indicator	Internal Buzzer	
Visual Indicator	Visual Indicators on the Lid Panel Green (Arrow): Standby Red (Cross Icon): Door Closing LED Strip Visual Indicators White (Breathing Light): Standby Green (Running Light): Door Opening Red (Flashing Light): Alarm	
Display	Optional (Available with integrated facial recognition systems)	
Lane Type	Single Lane	Dual Lane
Lane width	25.59” (650mm)(Standard), 35.43” (900mm)(Optional)	
Barrier Movement Type	Swing	
Motor	German-made DC brushless motor	
Movement Speed	0.3-0.6 seconds per movement (open/close timing) (depends on the leaf size)	
Movement Accuracy	≤ 1.5 Degree per movement	
Clutch	Mechanical clutch for anti-panic/anti-collision	
Lid Material	Tempered glass (black + white) (standard)	
Lid Options Authentication Methods	Under mount options: RFID /QR Code / Mobile Credentials/ Fingerprint / Facial recognition /Palm recognition /RFID +QR Code / Fingerprint +QR Code / RFID +QR Code+Fingerprint / Mobile Credentials Top mount option: Compatible with external facial recognition systems Side mount option: RFID/QR Code/RFID+QR Code / Mobile Credentials	
Chassis Material	Tempered Glass and High-carbon Steel	
Chassis Colour	White (Standard), Customizable	

Door Leaf Material (H x W)	Material: Acrylic(Standard), Tempered Glass(optional) Size: 29.33" x 11.61 (745 x 295mm)(Standard), 29.33"x 16.73" (745 x 425mm) / 62.99" x 11.61"(1600*295mm)/62.99"x 16.73"(1600x425mm)(Optional)
IR Sensors	12 pairs (Military-grade,matrix layout)
Motherboard Function	System configuration, anti-pinch, anti-tailgating, pass memory, safety logic, and more
Motherboard Communication	Fire alarm Port(Relay)*1, RS485 Port*1,RS232 Port*1 (Standard),TCP/IP(Optional)
Controller	Advanced servo controller Armatura Controller: AHDU-1260/ AHDU-1460 (Optional)
Credential Options	Under mount RFID, QR code & Mobile Credentials reader: (support model: Armatura EP10C & Armatura EP20 Series & Armatura VG10CKQ Series) under mount fingerprint reader: Armatura EP30CF Series under mount facial recognition terminal: coming soon under mount palm recognition terminal: coming soon Side mount RFID, QR code & Mobile Credentials reader: (support model: Armatura EP10C & EP20 Series & VG10CKQ Series) (For disable people) Top mount facial recogntion terminal: OmniAC20 / OmniAC30/ FT10CMQ
Flow Rate	RFID: 30 passengers per minute QR Code: 30 passengers per minute Mobile Credentials: 30 passengers per minute Fingerprint: 20passengers per minute Face: 15 passengers per minute Palm: 15 passengers per minute Emergency: 60 passengers per minute
Accessibility	Under mount facial recognition version: adult, children, disability Rest of the versions: adult, children (with care), disability (with care)
Power Supply	100-240VAC, 50/60Hz
Power Rating	40VA (Stand By); 200VA(Operation)
Fire Signal	Input for voltage-free contact
Noise Level	Less than 60dB
MTTR	Less than 60 minutes
MCBF	30 million

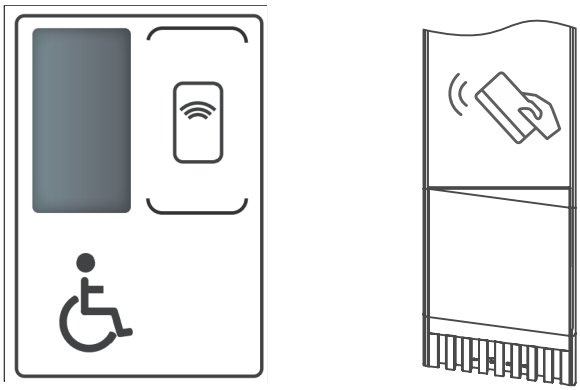
Weight	882 lbs (400kg) Net Weight: 661 lbs (300kg)	551 lbs (250kg), Net Weight: 441 lbs (200kg)
Dimension (L x W x H)	70.9" x 4.7" x 38.6" (1800 x 120 x 980mm)(Standard)	
Dimensions With Packing (L x W x H)	74.8"* 12.6"* 47.2"(1900*320*1200mm) (Standard)	
Operating Temperature	-4°F to 140°F(-20°C to 60°C)	
Operating Humidity	95%RH (non-condensing)	
Certifications	CE, FCC, RoHS(coming soon), UL325(coming soon), UL2593(coming soon)	
Ingress Protection Rating	IP33 (Dustproof and Waterproof for indoor use)	
Supported Software	Armatura One	
Safety Features	Infrared Anti-Clamping Mechanical Anti-Clamping Electric Current Detection Anti-Clamping Power-Off Fail-Safe Emergency Escape Function Overforce Feedback Control Safety force sensing Lower safety sensors Accurate presence sensing Emitter/ receiver infrared sensors technology Logic voltage 24V DC Voltage free contact input for fire alarm fail state Auto opening on power off Anti-panic push opening in operation Wide walkway for wheelchair or easier access Accompanied wheelchair or child passage management (under mount facial recognition & Side mount RFID & QR code reader version)	

2. Authentication Methods

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

Streamlined Under Mount Options:

RFID only,RFID & QR Code.



*The configuration on the left side of the picture above is accessible to persons with disabilities.

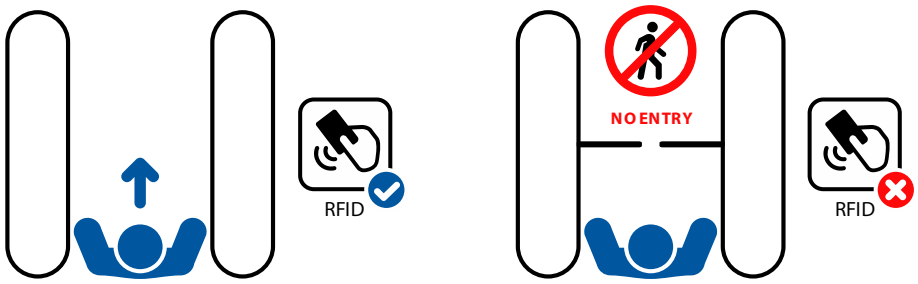
Surface Mount Option:

Mounting Pole (Compatible with FT10CMQ / OmniAC20 / OmniAC30).

2.1 Card Verification

When the device is configured with a card swipe module, the Card Verification mode compares the card number in the card induction area with all of the card number data registered in the device and sends it to the Access Controller.

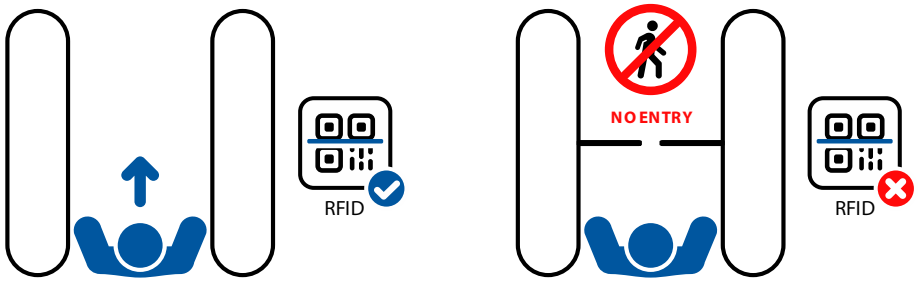
When a user presses his / her card on the card reading area, the device enters card authentication mode.



2.2 QR Code Verification

The QR code Verification mode is to scan the QR code on the user's mobile phone through the QR code scanner and compare the data with the registered QR code, and then sends it to the Access Controller.

When the user places the mobile phone displaying with the QR code on top of the QR code scanner, the device enters the QR code authentication mode.



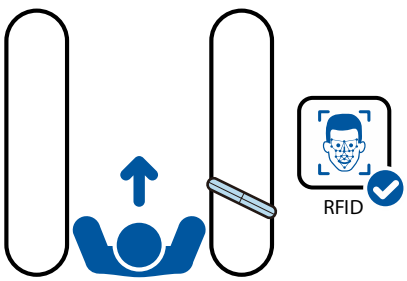
2.3 Facial Verification★

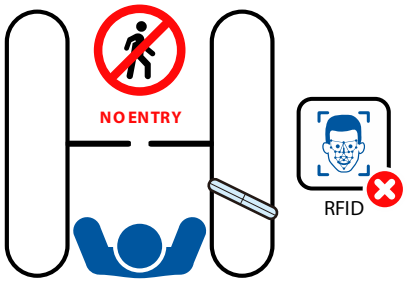
In this verification mode, the device compares the collected facial images with all face data registered in the device and then sends it to the Access Controller.

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

Recommended Standing Posture and Facial Expression:

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





3. Installation

3.1 Installation Tools

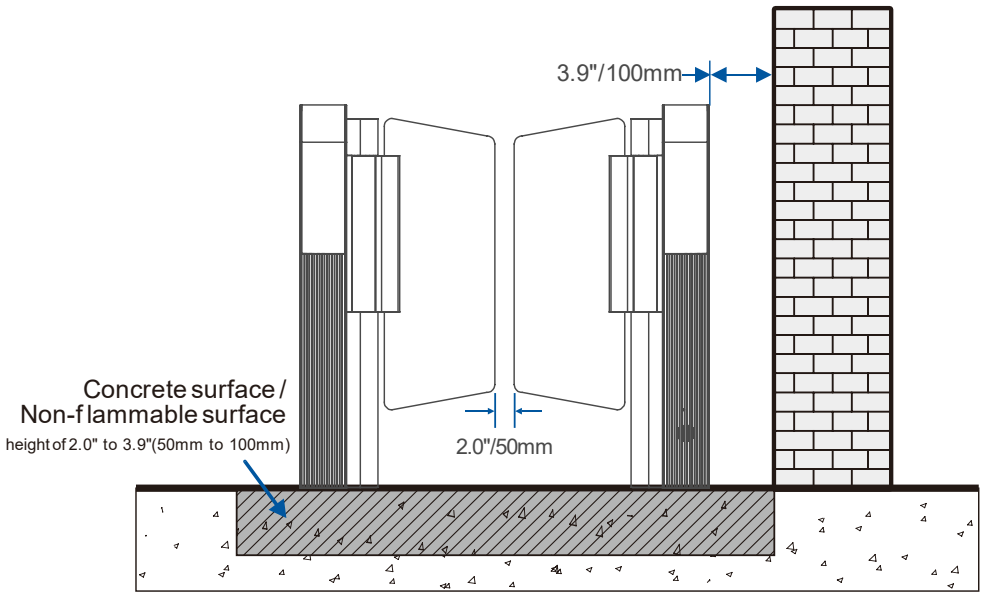
- Tapeline
- Marker Pen
- Pencil
- Percussion Drill
- Screwdriver
- Wrench
- Hex Wrench
- Cutting Machine

3.2 Installation Requirements

1. It is recommended that the turnstile must be installed on a horizontal solid platform with a height of 2.0" to 3.9"(50mm to 100mm).
2. It is recommended that the turnstile should not be used in the corrosive environment.
3. Make sure that the ground wire of the system is securely connected to avoid personal injuries or other accidents.
4. After installation, check if the connection has been done correctly at the connecting points of the ground wire, at the connector assemblies and wiring points of the circuits, as well as at each movable part of the turnstile. Any loose nuts, screws and other fasteners should be tightened in time to avoid any failures caused by long-time operations.

3.3 Installation Environment

1. Before installation begins, prepare installation tools, check the device and the accessories, and clear the installation base.
2. Make sure that the appliance is mounted on a concrete surface or other non-flammable surfaces.
3. The installation position of the turnstile depends on its size. A distance of 3.9"(100mm) between the turnstile and the wall needs to be reserved for ease of opening the top lid of the turnstile to perform maintenance and adjustment. The reference figure is shown below:

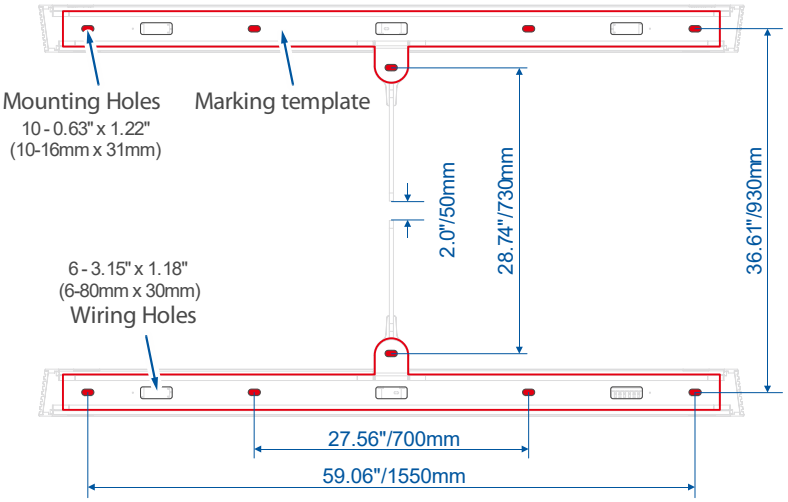


3.4 Installation Cabinet

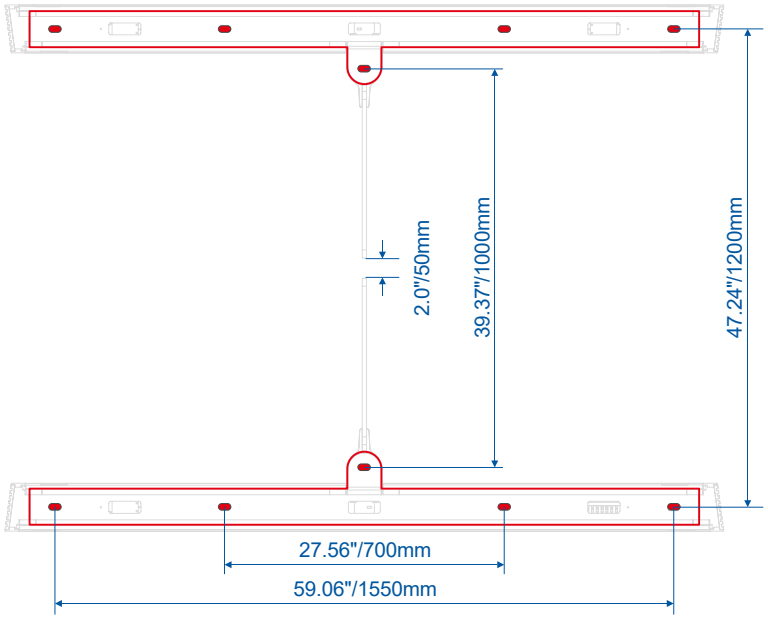
Step 1 Determine and Mark the Mounting Positions

1. Please refer to the user's manual and complete the power-on self test operation before installation.
2. The first step is to determine the location for the cabinet installation. Once this has been done, the marking template should be placed according to the installation distances shown in the following figure. It is important to ensure that the distance between the inside walls of the cabinet on both sides of the channel inlet and outlet is measured consistently.
3. Then use a marker to mark the location of the 10 mounting holes and the outline of the mounting template.

Standard Lane



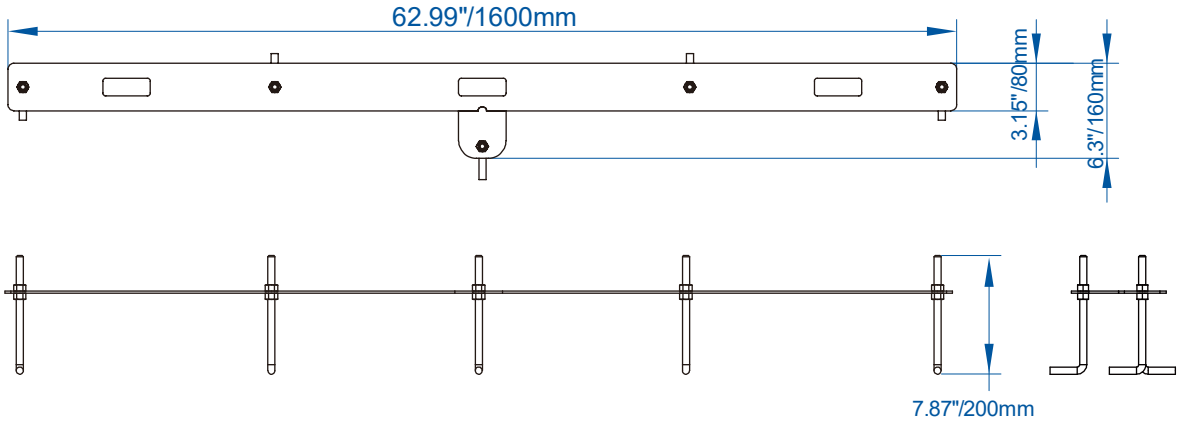
Wide Lane / ADA Lane



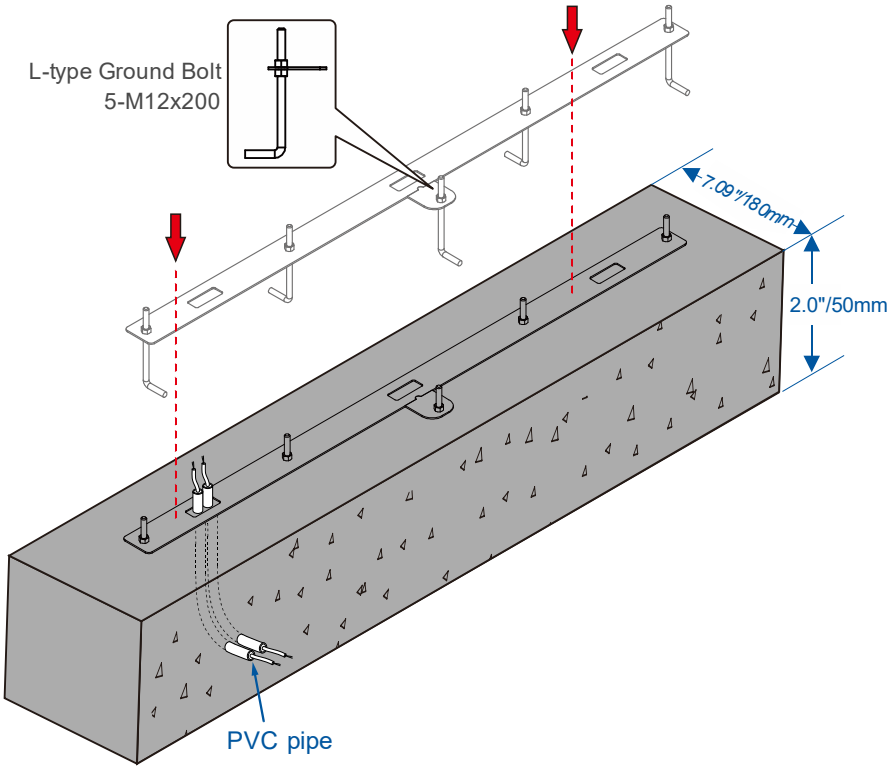
Step 2 Foundation and Pre-assembled Components

1. Dig a recess 2.0" (50mm) deep with the dimensions shown below. For laying out pre-assembled components.
2. Place the pre-assembled components into the recess and pour concrete to fix it in place.

Pre-assembled components

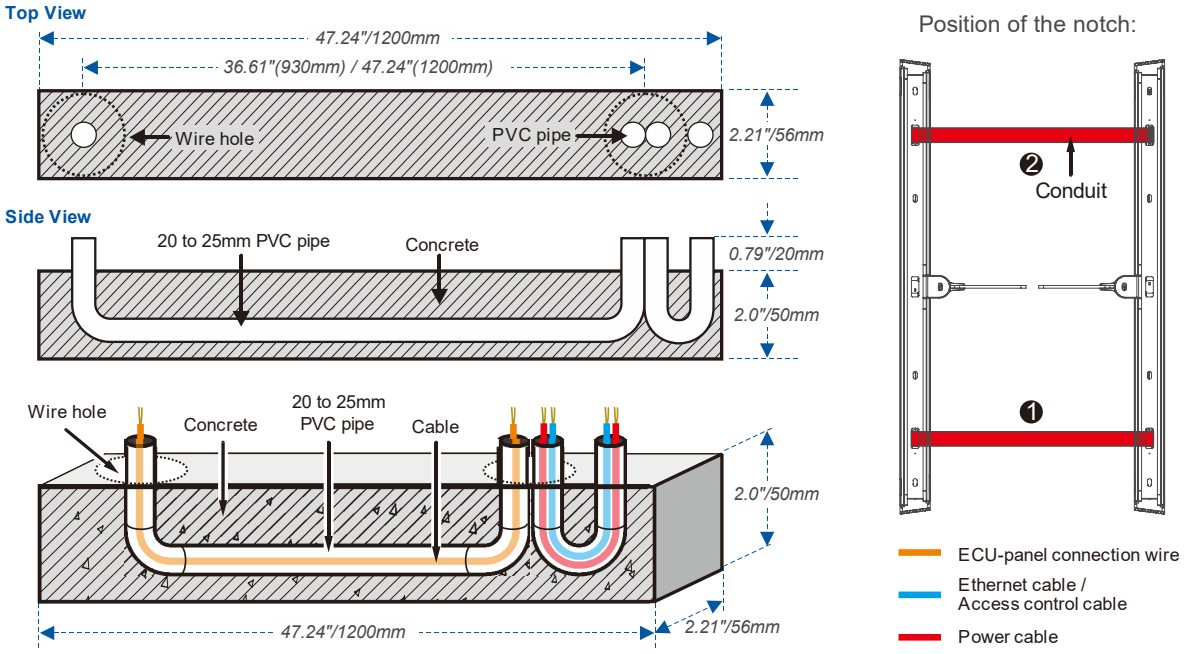


Fixed the pre-assembled components



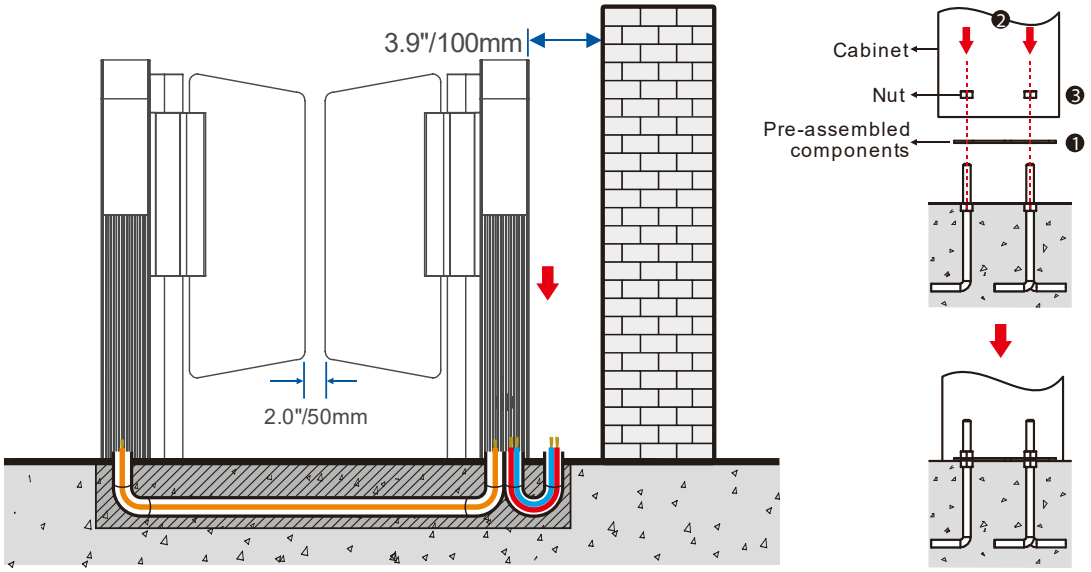
Step 3 Wireway Laying

1. Dig a recess of 2.0" (50mm) depth between the wire holes on both sides of the channel with the dimensions shown below. Recesses can be dug at positions ❶ and ❷.
2. Then lay two 0.8" to 1.0" (20 to 25mm) diameter PVC pipes as shown below.
3. After threading the cable out of the PVC pipe, pour concrete to f ix it in place.



Step 4 Fixed Cabinet

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



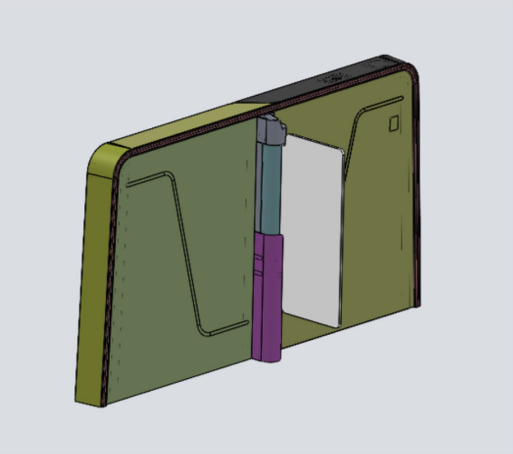
3.5 Detailed Installation Instructions

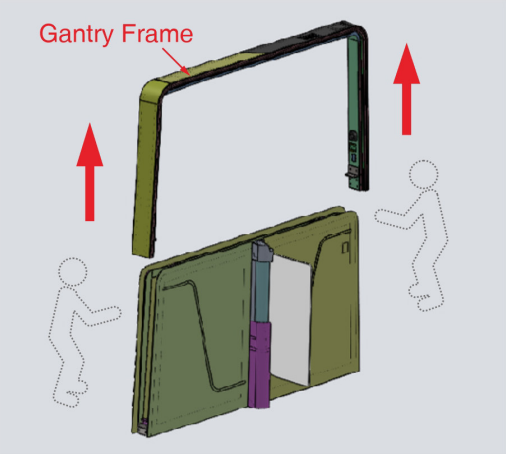
Step 1 Removal of Gantry Frames

1. Remove gantry frame

Working in pairs or multiples, lift the gantry frame from each end and remove the gantry frame once it is raised. Take care to maintain balance at both ends.

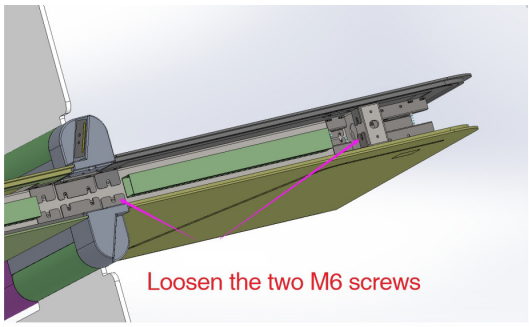
Note: *After the frame is raised, unplug electrical connections such as indicator lights, speakers, etc. before removing the gantry frame.*

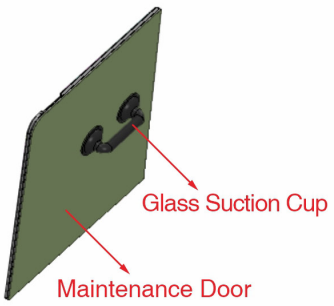


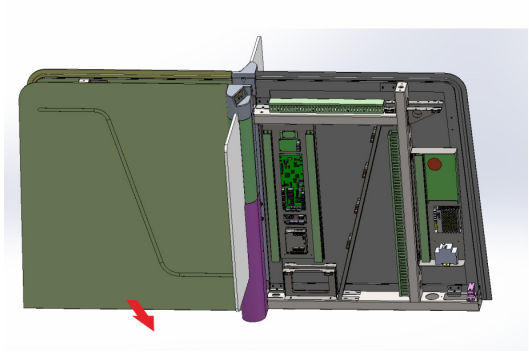


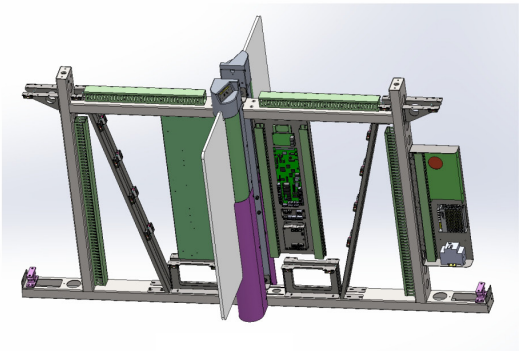
2. Disassembly of maintenance door assembly

Remove the maintenance door fixing screws from the top and then remove it with a glass suction cup.



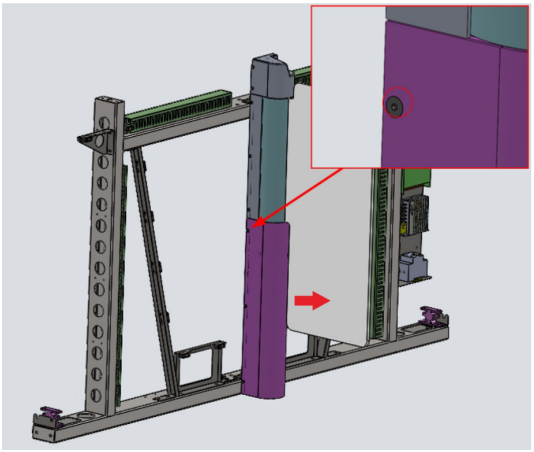


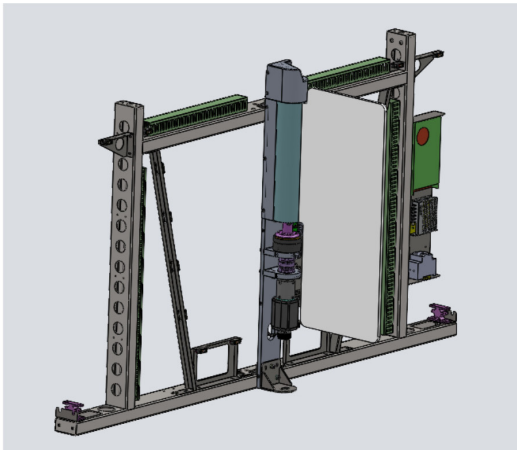




3. Removing the movement lower cover

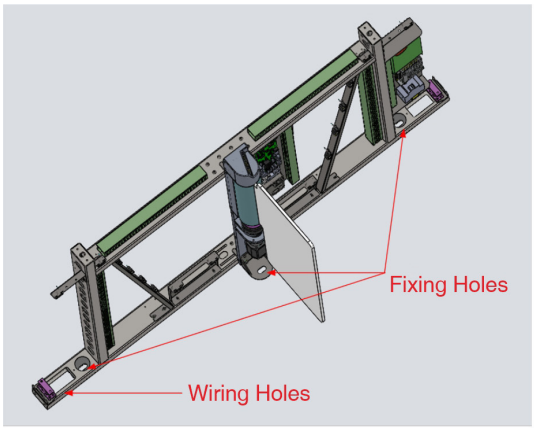
Loosen the screws of the lower movement cover and remove the cover.

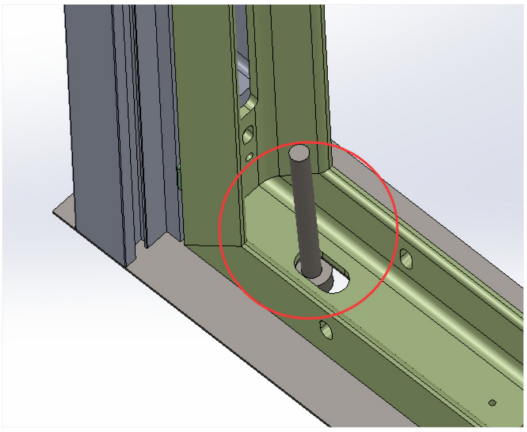




Step 2 Mounting Fixing

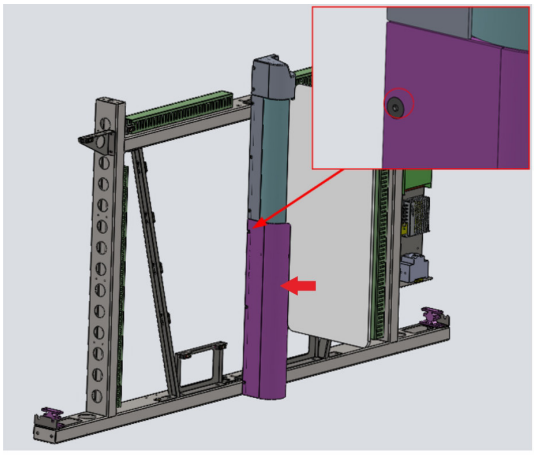
Place the chassis on the pre-mounted L-type ground screws in accordance with the fixing holes on the bottom of the chassis, and lay the communication cables and 220V power cables at the same time.

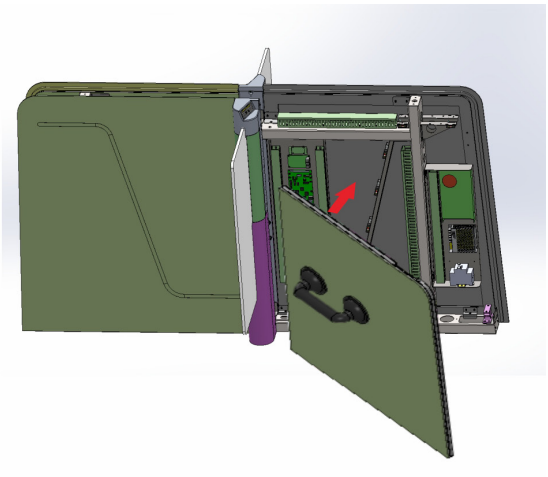




Step 3 Put the Gantry Frames Back On

1. After tightening the chassis, install the lower movement cover and then the maintenance door assembly.

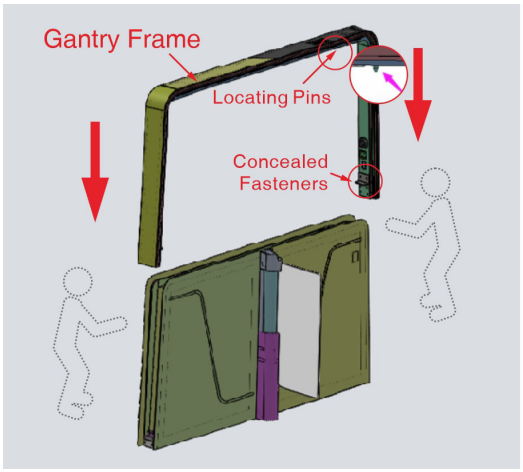


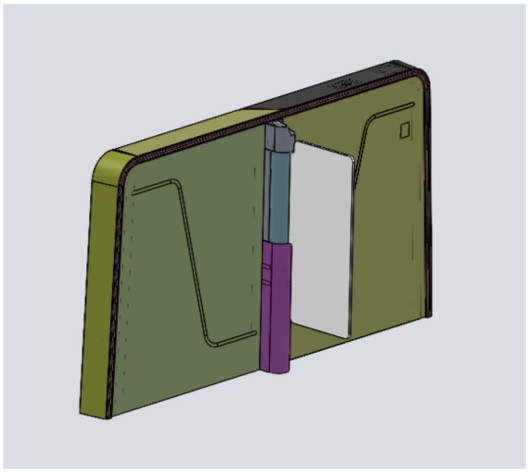


2. Installation of gantry frames

Align the locating pins and concealed fasteners on the gantry frame, and with two people working together, insert the frame flush into the gate box body.

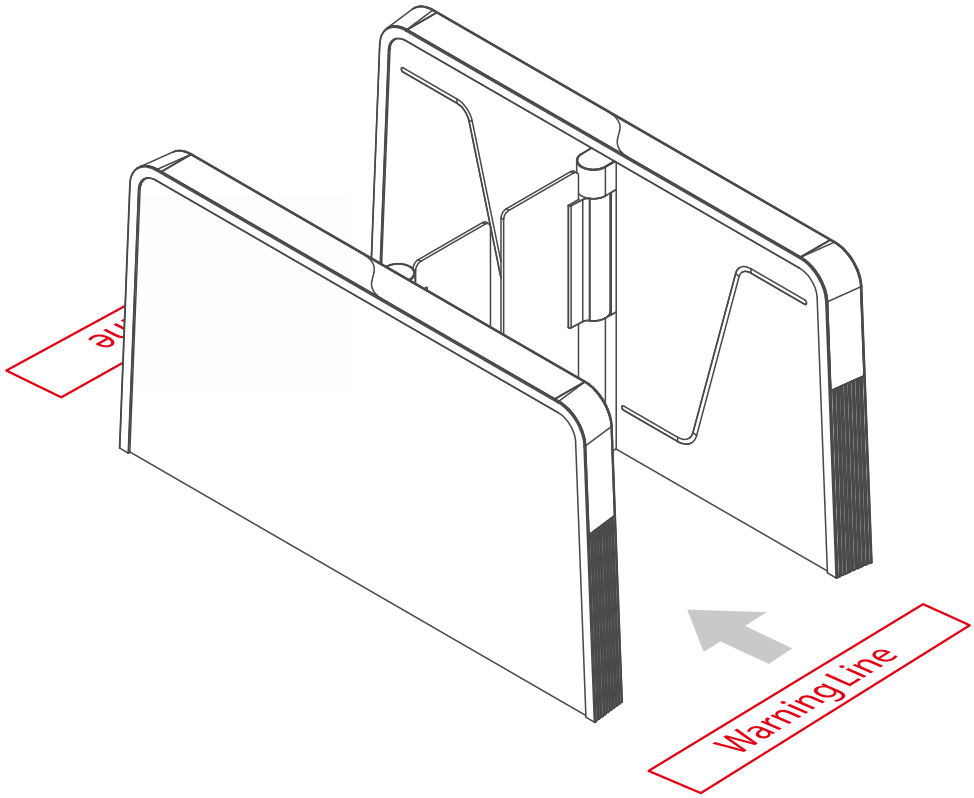
Note: *Connect the indicator lights, speakers and other electrical appliances.*





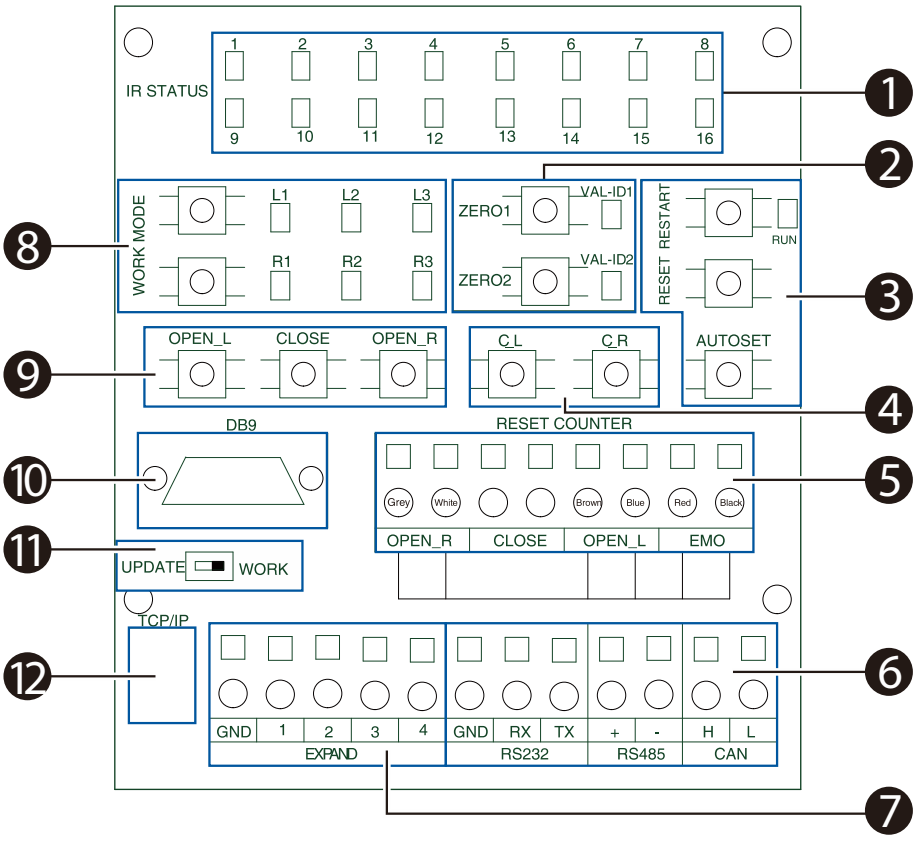
Step 4 Marking the Warning Line

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



4. Terminal Description

4.1 Gate Control Mainboard Panels

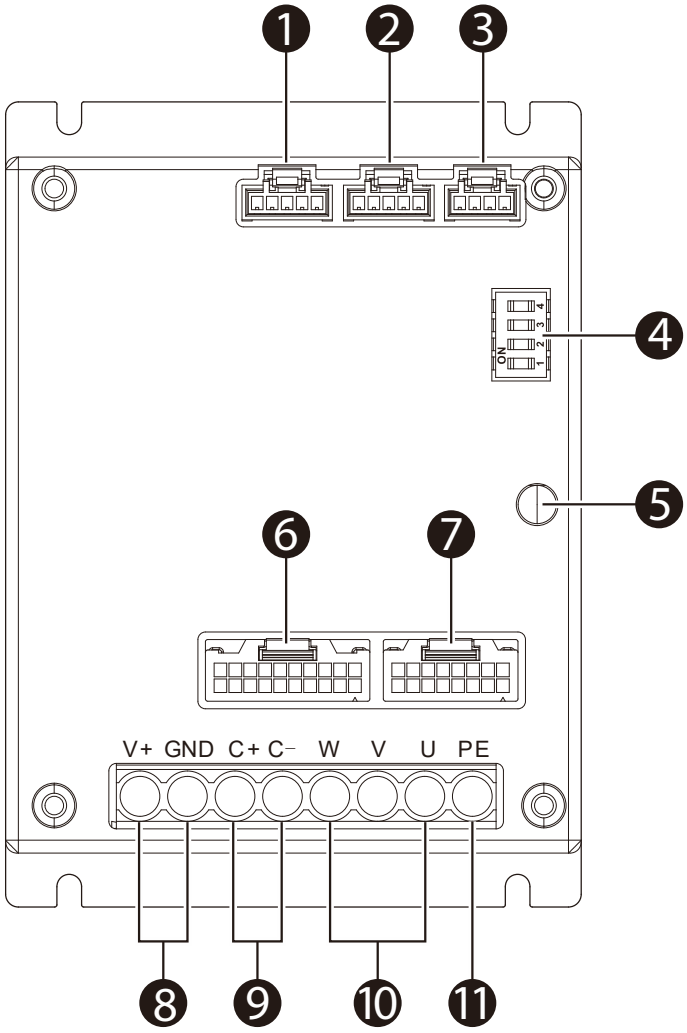


NO.	Terminal	Descriptions
1	Infrared Status Indicator	Indicates the status of the corresponding IR. When the corresponding IR is blocked, the corresponding lamp goes out.
2	Zero Adjustment	▪ **ZERO1:**Closing position adjustment. After pressing ZERO1, VALID1 lights up, manually adjust both swing gates to the closing position, then press ZERO1 again, VALID1 goes out. ▪ **ZERO2:**Invalid.

3	Reset & restart & auto-adjustment	▪ **RESTART:** Restart the gate system. ▪ **RESET:** Restore the default settings of the gate system. When pressed, all settable parameters of the gate control main board are restored to the factory setting state. ▪ **AUTOSET:** Long press **3s** later will alarm prompts, enter the automatic adjustment mode, the gate will open left 5 times, right 5 times, to adjust the movement parameters. Short press (the duration of pressing is within **2s**) to enter/exit the test mode, the gate will take turns to open the door left and right. ▪ **RUN indicator:** Running status indicator, the gate will flash 1 time per second during normal operation.
4	Counting Clear Buttons	▪ **C_L:**Inbound count clear ▪ **C_R:**Outward count clear
5	Gate Dry Contact Control Input	Using dry contact signals such as relay signals, buttons, etc., the gate can be opened and closed for gate control. ▪ **OPEN_R:** Inward door opening ▪ **OPEN_L:** Outward door opening ▪ **CLOSE:** Invalid ▪ **EMO:** Emergency door opening
6	RS232/RS485 Communication Interface	Default communication interface of the gate. **RS232** ▪ **GND:** Ground ▪ **RX:** Receive port of RS232 ▪ **TX:** Transmit port of RS232 **RS485** ▪ **+:** Positive port of RS485 ▪ **-:** Secondary port of RS485
7	Extended Input Interface	Used to implement extended functions

8	Entry & Exit Working Mode Setting	MODE(L) and WORK(R) buttons can switch the working mode of the gate in the entry and exit direction. ▪ **MODE(L):** Switch entry working mode (controlled - free - forbidden, cyclic switching). ▪ **WORK(R):** Switch exit working mode (controlled - free - forbidden, cyclic switching). Passage mode indicator shows the working mode of the corresponding direction. ▪ **L1 (green):** light indicates that the inbound direction is in free passage mode. ▪ **L2 (red):** the light indicates that the incoming direction is in the prohibited mode. ▪ **L3 (yellow):** light indicates that the incoming direction is in the controlled traffic mode. ▪ **R1(green):** light indicates that the outgoing direction is in free pass mode. ▪ **R2 (red):** light indicates that the outgoing direction is in the prohibited traffic mode. ▪ **R3 (yellow):** light indicates that the outgoing direction is in controlled traffic mode.
9	Test Buttons	The three buttons on the panel allow direct testing of the left, right and closed doors. ▪ **OPEN_L:** Inward door opening ▪ **OPEN_R:** Outward door opening ▪ **COLSE:** Invalid
10	DB9	▪ Used for burning and upgrading the firmware of the gate control board. ▪ One of the default communication interfaces of the gate.
11	Updata Protection Lock	When the gate needs to burn a new programme for upgrading, turn the switch to the "**UPDATE**" position and then burn the programme through the **10.**(**DB9**) interface. **Note:** For normal operation, the switch must be turned back to the "**WORK**" position.
12	Ethernet Interface	Customisable Ethernet communication interface.

4.2 Main/Sub Device Motor Control Board



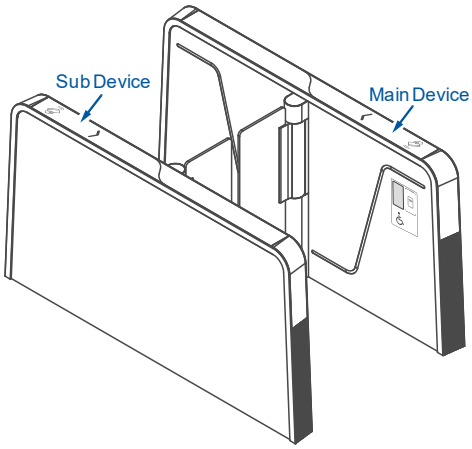
NO.	Terminal	Descriptions
1/2	RS485/CAN Interface	CAN_H、CAN_L、GND、RS485 B、RS485 A
3	RS232 Interface	NC、TX、RX、GND
4	Dip Switch	**1:** CONF1 **2:** CONF2 **3:** CAN **4:** 485 **NO:** When the dialling code is set to the NO direction, the driver board is the main. When dialled in the direction of numbers, the driver board is the sub.

5	Operation Indicator	**Normal:** green light flashes slowly **Programming:** red light flashing fast
6	IO Interface	
7	Motor Encoder Interface	Encoder and motor hall wire access terminal
8	Power Input	24V-48V DC power supply input
9	Clutch	C+, C-
10	Motor Interface	U, V, W Three-phase power supply for motors
11	PE	PE Shielded Cable

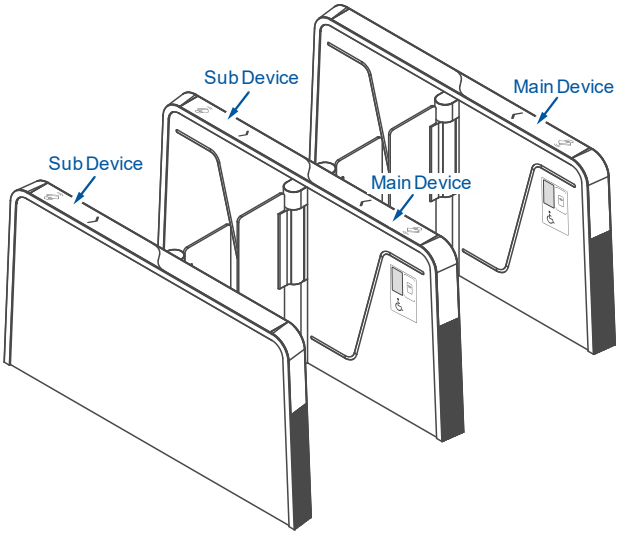
5. Wiring Instructions

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

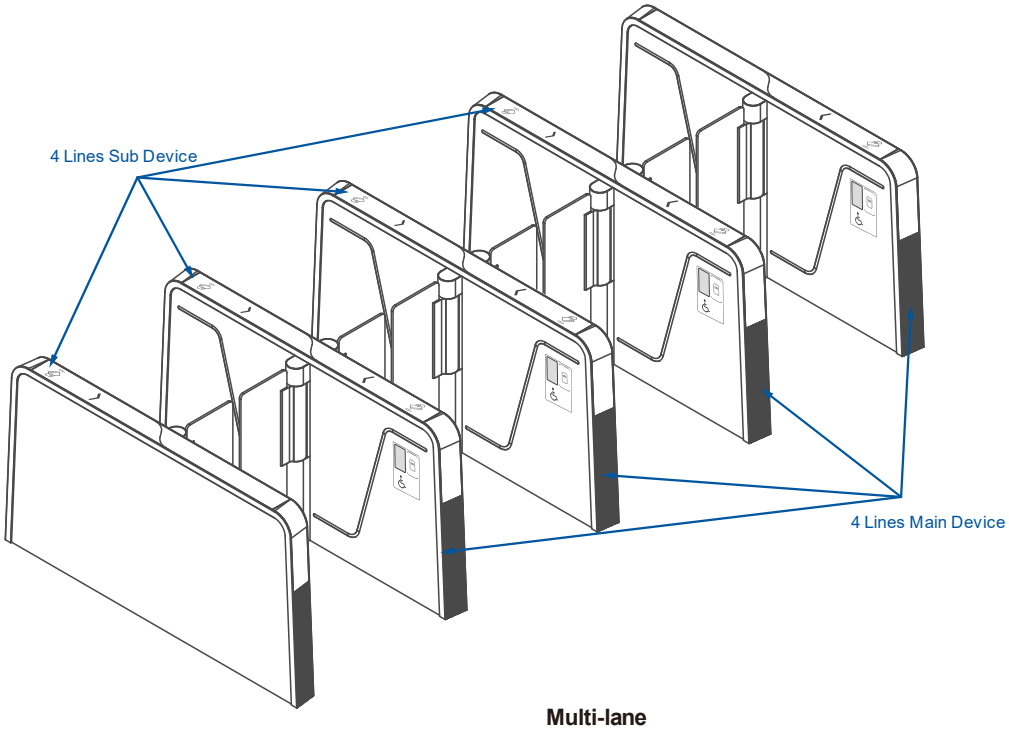
5.1 Main-sub Location



Single-lane



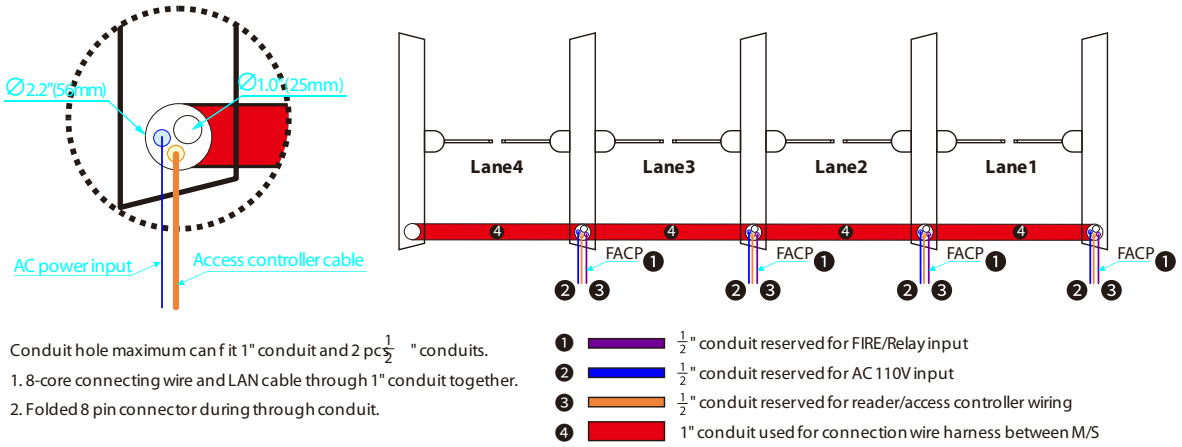
Dual-lane



Multi-lane

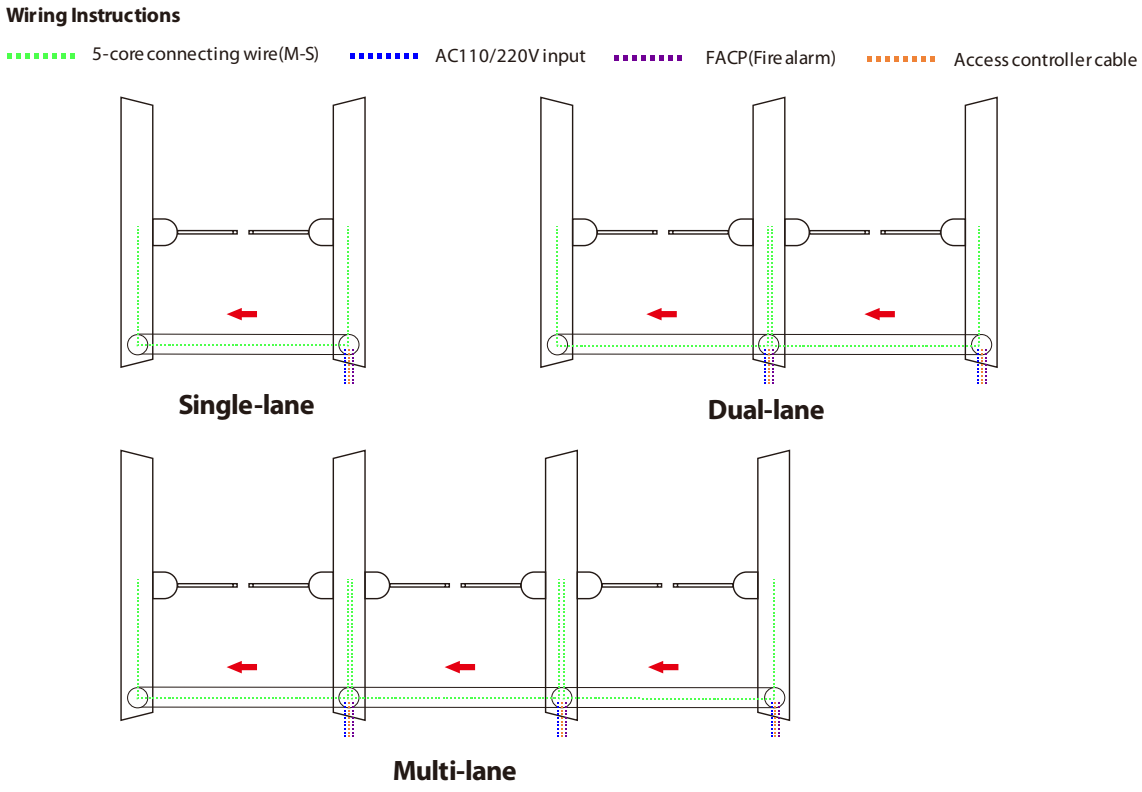
5.2 Slotting Position

For the different channels, the slotted locations are shown below.

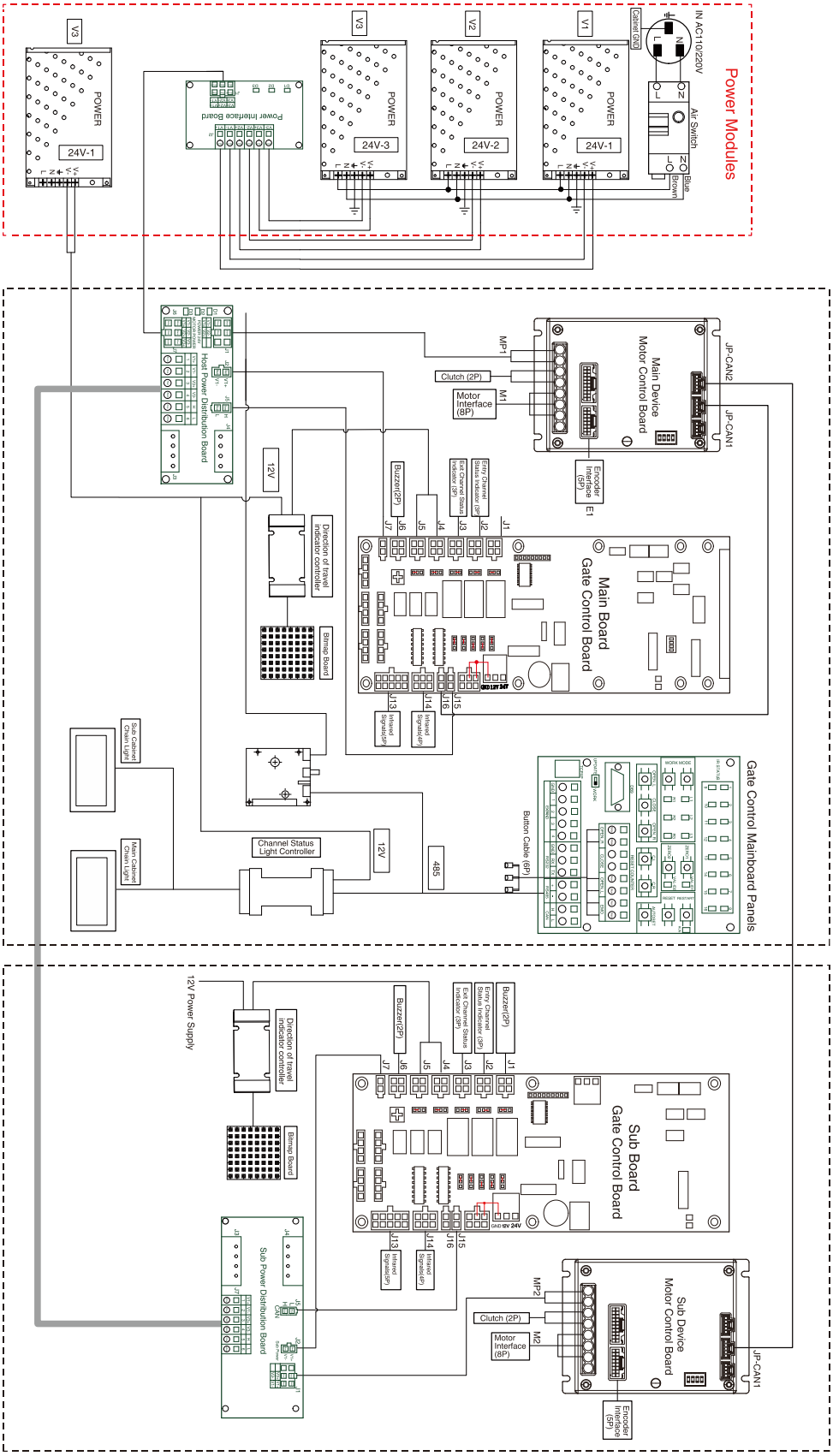


5.3 Wiring Methods

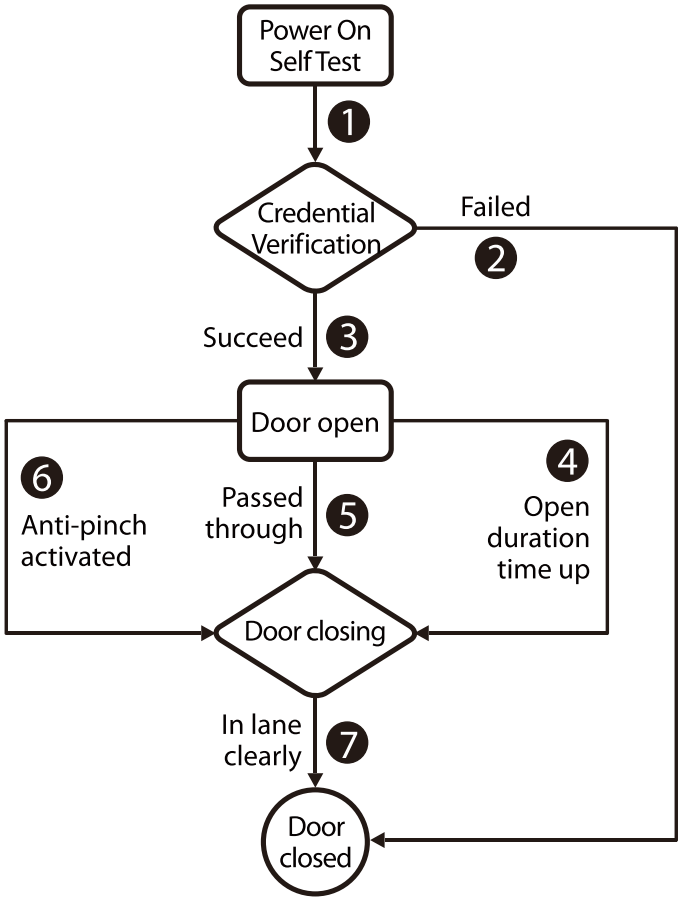
The wiring principle is to connect the main device to the sub device and communicate via the ECU-panel connection wire. Each main device is then powered individually. The following diagram shows how the different channels are wired.



5.4 System Wiring Diagram



6. Operation Process



1. POST (Power On Self Test)

When powering up the unit, wait 30 seconds for the system to perform a POST (Power On Self Test) procedure. If no problems are detected, the unit will operate normally. If a fault is detected, the system will display a relevant message on the LCD display so that the user can quickly understand and solve the problem.

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

2. Credential Verification

After the device power-on self-test is completed, it enters the standby state.

When the user places a valid card in the swipe area, i.e. the device recognizes a valid card. The LCD display will show success and a buzzer will give a positive audible indication to the pedestrian that it has been successfully validated. The card reader then sends a signal to the access controller requesting permission to pass through the channel. The access controller will send a signal to the revolving door control panel. After receiving the signal

from the card reader and the Infrared Sensor, the Turnstile Control Board will send valid control signals to the servo motor driver.

1) Verification Success

When the verification is successful, the door is opened.

2) Validation Failure

When verification fails, the door remains closed.

Note: At this time, if the system is in forbidden passing mode, the mode indicator light will turn red, and the Turnstile Control Board will not accept signals of card.

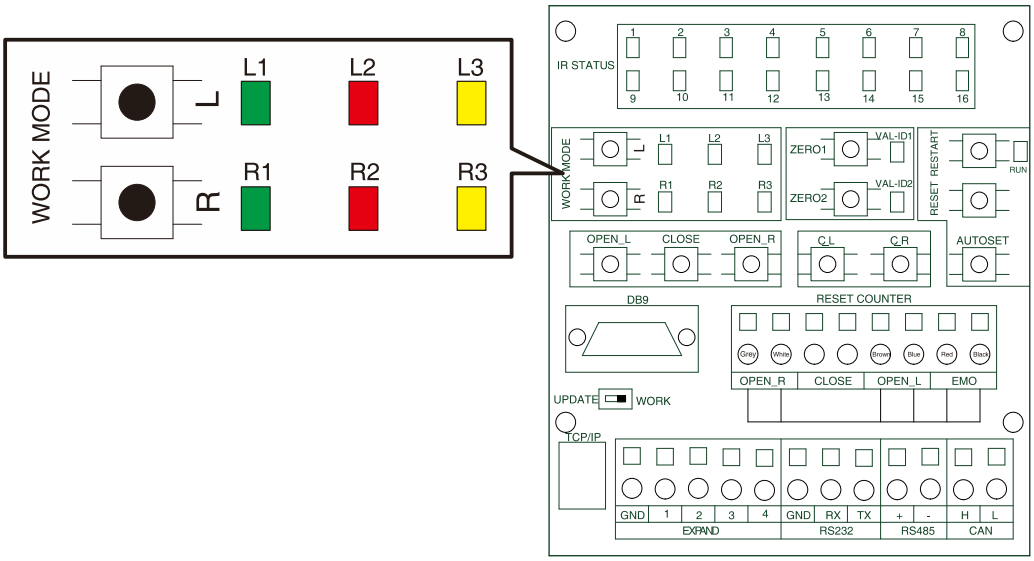
3. Passed Through

After the passenger passes the channel according to the opening direction of the swing arm, the Infrared Sensor will keep detecting the movement of the pedestrian throughout the passage and continue sending signals to the Turnstile Control Board until the pedestrian has fully passed through the passage.

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

7. Machine Operation

7.1 Entry & Exit Working Mode Setting



Gate Control Mainboard Panels

The user can set the Entry & Exit working mode on the gate control main board panel.

Press the MODE(L) and WORK(R) buttons to change the gate's working mode in the entry and exit directions. And the entry and exit directions can be set independently of each other.

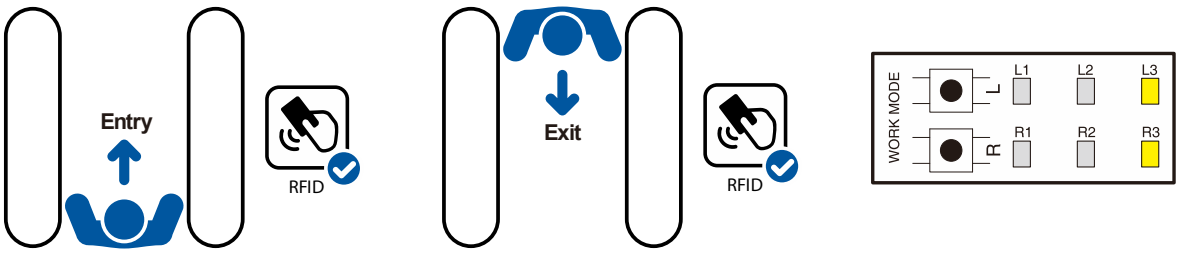
- **MODE(L):** Switch entry working mode (controlled - free - forbidden, cyclic switching).
- **WORK(R):** Switch exit working mode (controlled - free - forbidden, cyclic switching).

Example:

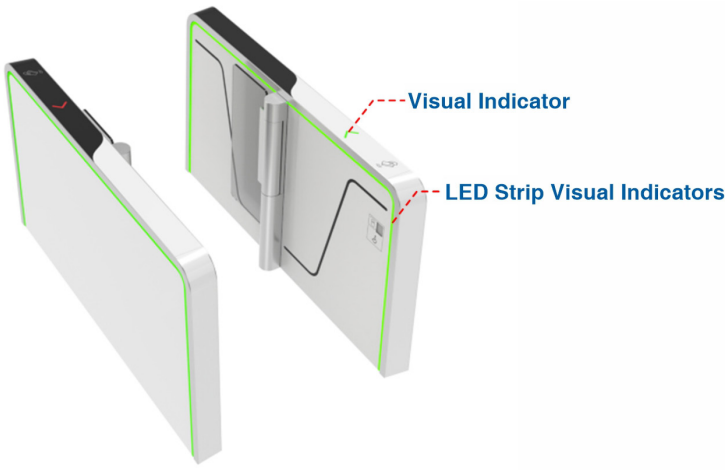
Entry & Exit: access requires verification

Operation:

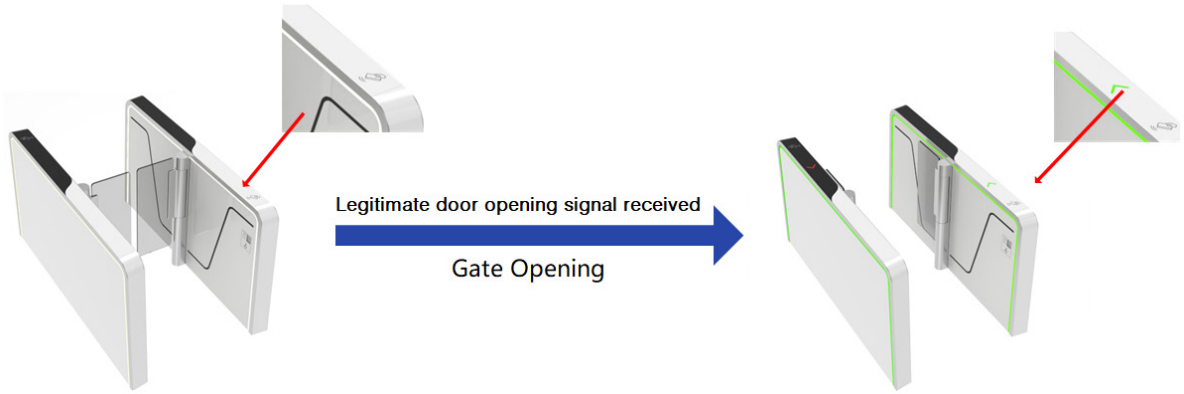
Press the MODE (L) and WORK (R) buttons respectively to light the yellow lamps for L3 and R3.



7.2 Visual Indicator Description



Visual Indicator: Visual indicators on the lid panel. Indicates the legal passing direction of the gate. In standby mode, it is not displayed, and after receiving the legal signal, the indicator lights up with green running lights. Green (Arrow): Standby. Red (Cross Icon): Door Closing



LED Strip Visual Indicators: Indicates whether the gate can open the door when it receives the legal open signal.

8. Maintenance

8.1 Chassis Maintenance

The chassis is made up of tempered glass and high-carbon steel. If it is used for substantial period, then there may be rust stains on its surface. Regularly clean the surface with a clean cloth carefully. Coat the surface with anti-rust oil and do not cover the infrared sensor.

8.2 Movement Maintenance

Before doing maintenance, turn off the power. Open the door, wipe the surface dust, and apply lubricant for smooth movement.

8.3 Power Supply Maintenance

- Switch off the power supply before maintenance.
- Check the power plug connection, if found loose, fix it properly.
- Do not change any connection position randomly.
- Check the external power supply insulation periodically.
- Do periodic check for any kind of leakage.
- Check if the technical parameters of interface are normal.
- Check the service life of the electronic components and replace accordingly.

Caution: All the above-mentioned maintenance methods for swing barrier must be carried out by a professional technician, especially the movement and the electric control part. For ensuring operational safety, first switch off the power supply when the barrier is not in use. Perform the safety check on a weekly basis to ensure that the turnstile is safe and ready for user operation.

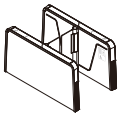
9. Troubleshooting

No.	Failure Descriptions	Analysis and Solution
1	The mode indicator light does not respond or the indication is incorrect.	Verify the control panel's mode indicator wiring connection and check for loose contacts.
2	Only one speed gate unlocks after swiping the card.	Check the mode setting of the main and sub devices and the 8-core, 2-core connection lines. See the wiring diagram for the specific connection circuit.
3	The barrier doesn’t close when the opening delay time is ended.	Check to see if the opening delay time is too long or whether the IR sensor is covered or obstructed.
4	When the gate is self-tested, the wing arm is not in the normal closing position!	In the process of self-test, there are obstacles, please remove the obstacles, restart the self-test after power-on!

10. Packing List

The package consists of the following items:

Avalon-S1000

	Avalon-S1000 (Main and Sub)	2
	Power Cable	1
	Card	1
	L-type Ground Bolt M12*200	10
	Washer	10
	Spring Washer	10

Avalon-S1200

	Avalon-S1200	1
	Power Cable	1
	Card	1
	L-type Ground Bolt M12*200	6
	Washer	6
	Spring Washer	6

Revision History

Revision	Date	Author	Reviewer	Description
V1.0	02/13/2025	Julia.Huang		Original Document

ARMATURA

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