

Full Height Turnstile Gate User Manual

1 Product Introduction

1.1 Product Introduction

Full-height turnstiles, also known as full-height turnstiles or cross gates, effectively prevent climbing and crawling, and are suitable for unattended operations and situations with strict security requirements. Full-height turnstiles can be easily integrated. IC Card reading and identification devices, such as physical cards, ID cards, barcode cards, fingerprint cards, and facial recognition devices, enable intelligent and efficient management of channels.

According to the number of access channels, turnstiles can be divided into single-door full-height turnstiles and double-door full-height turnstiles; according to the rotation angle, they can be divided into...90 -degree full-height gate and 120 -degree full-height gate.

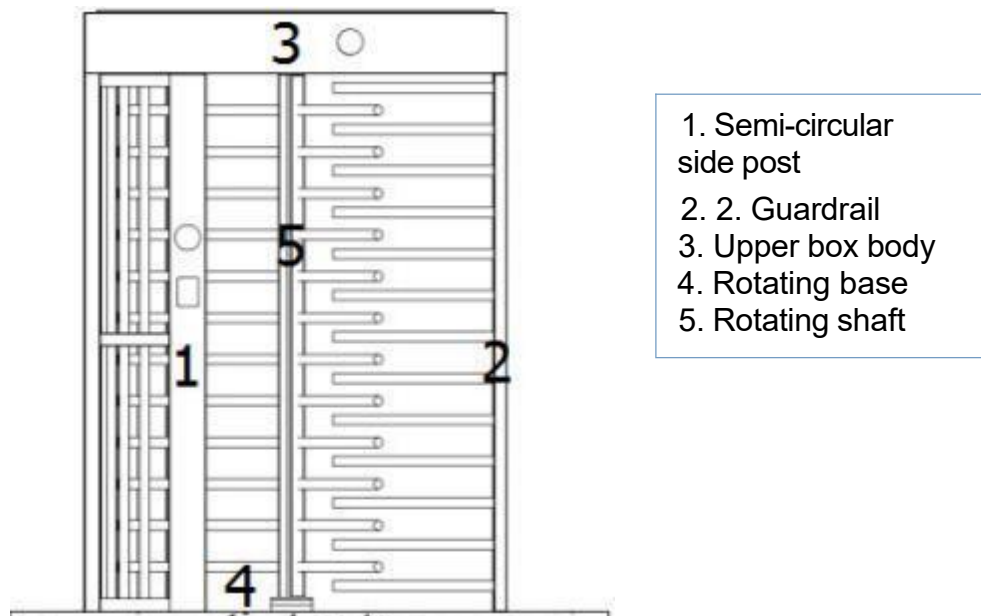
Advantages of full-height gates:

- 1) The security of the full-height turnstile is the highest among all turnstiles, and it is the only one that can achieve unattended operation.
- 2) It can enable single-person passage, and its safety and reliability are relatively high;
- 3) It has strong waterproof and dustproof capabilities and is highly adaptable to the environment , making it suitable for both outdoor and indoor use.

1.2 Product Structure and Working Principle

The full-height gate consists of a mechanical part and an electrical control part. The mechanical part consists of an upper housing, a mechanism, a rotating shaft, a bearing base, and a guardrail.

The movement and control board are installed in the upper housing.



The electronic control system consists of an access control system, control board, direction indicator lights , solenoid valves, limit switches or travel switches, adapter board, switching power supply, battery, etc.

Serial Number	name	Function
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1	Access control system	IC/ID card access control, fingerprint scanner, facial recognition, QR code device; provides gate opening signal to the gate control board ; remote control, button opening (optional).
2	control board	When the system's control center receives a door opening signal from the access control system, it opens the solenoid valve, switches the direction indicator light to green arrow, and simultaneously receives a limit switch closing signal.
3	Solenoid valve	The gate closes when in standby mode and opens when a card is swiped to open it, allowing the rotating shaft to be pushed open. It closes again once it is in position.
4	Turn indicator lights	Displays the current passage status of the channel, standby red.X Swipe card to switch to green arrow
5	Limit switch	After the gate rotates to the correct position, a closing signal is sent to the control panel to close the solenoid valve.
6	Adapter board	After a power outage, the system switches to battery power, and the solenoid valve remains open.
7	24V switching power supply	Control board power supply
8	Battery	After power failure, the solenoid valve remains open and the gate remains unobstructed. Note that it requires external charging once the power is depleted.

Working principle of turnstile system

- 1) Turn on the power. The control board will emit a beeping sound, and the gate indicator light will light up, indicating that the gate is in working condition.
- 2) When the access control system reads a valid card, valid fingerprint, or QR code, it sends an opening signal to the gate.
- 3) When the main control board receives the gate opening signal, it switches the direction indicator to a green arrow for passage, and the solenoid valve opens.
- 4) Pedestrians should manually push the turntable according to the directional indicator lights. When the turntable is about to turn to...90 degrees or At120 degrees, the mechanism cam approaches the limit switch or travel switch, sending a closing signal to the control board to close the solenoid valve;
- 5) If the pedestrian's card swipe fails... It will automatically shut down in 5 seconds.

1.3 Features

- ① Anti-impact function: the gate will lock and cannot be pushed open if no opening signal is received;
- ② Multiple passage modes are available: two-way card swiping, one-way card swiping and free passage, and two-way free passage (manual).

③ It has an automatic reset function. After the gate is opened, if no passage is made within a specified time, the system will automatically cancel the user's passage permission. The reset time is adjustable (the system default time is...).5S) ;

④ A standardized external port allows connection to various access control devices and enables remote control and management via a management computer ;

⑤ Hydraulic buffer ensures smooth operation and low noise;

1.4 Technical Parameters

Box material	304Stainless steel	Input power	AC220 ± 10% V 50Hz ;
Output power	24V DC	driving method	24V Solenoid valve
Operating temperature	-20 °C - 60 °C	relative humidity	Relative humidity ≤ 90% Non-condensing
Opening signal	Passive signals (relay dry contact signals)	Communication interface	RS485

Wide passage	≤550mm	Traffic speed	≤40people/minute
Application Scope	Indoor or outdoor	Power consumption	50W

2 Installation Instructions

2.1 Installation Precautions

- ❖ Please read this user manual before installation;
- ❖ To facilitate installation and subsequent maintenance, installing ground-to-roof panels requires at least [time period missing].2.6 meters high;
- ❖ When installing a gate, it is essential to ensure that the gate body is horizontal and the rotating shaft is vertical.
- ❖ Connect the system protective ground wire;
- ❖ Power-on testing can only be performed after verifying that the wiring connections are correct and there are no short circuits.
- ❖ After the equipment is installed, it must pass a status check and functional test before it can be put into normal use.
- ❖ If any abnormalities occur during installation, please contact our technical staff immediately for assistance.

2.2 Installation of turnstiles

1) Prepare the tools for installing the equipment (hammer drill, expansion bolts, adjustable wrench, a set of Allen wrenches, screwdriver , electrical adhesive, wire cutter) and check the accessories according to the packing list and keep them safe.

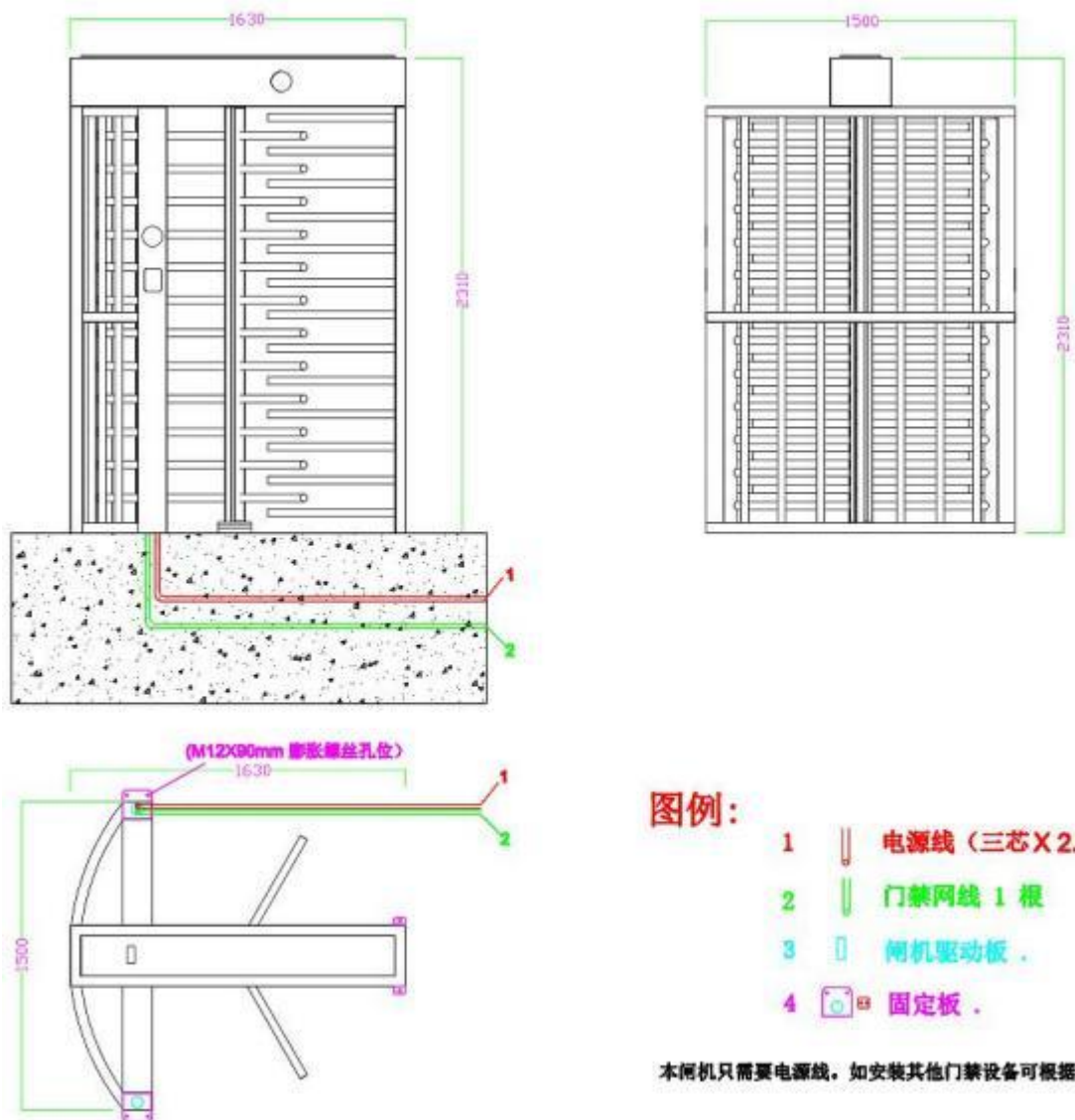
2) Make an overall plan at the determined installation location and prepare to begin installation;

3) Ensure the ground at the installation location is level and that the foundation surface for the equipment is properly prepared;

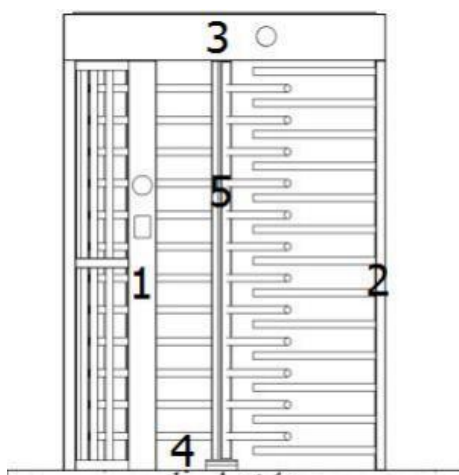
4) The conduit runs from the ground to the turnstile, mainly connected to 220V. Power cords, control cables, or access control network cables. Note: All empty conduits from top to bottom can be used for wiring. It is best to run the wiring in a place that is convenient for connecting to the control board.

5) Each channel usesAC220V power cordRVV3*2.0mm and access control network cable 1 cable (Note: If the equipment is equipped with access control, consumption control, or other control systems, the relevant wiring should be laid according to the actual site conditions).

The following is a reference wiring diagram for a single gate of a full-height gate;



6) Inspect each component of the full-height gate and begin planning the assembly. Refer to the following diagram for the assembly sequence of the full-height gate.



First, assemble the side railings 1 and 2. Then, place the top chassis 3 on top of 1 and 2 and tighten the fixing screws. Place the bottom bearing plate 4. Finally, place the 5 rotating shaft on the bottom bearing 4 , connecting the upper part of the rotating shaft to the top chassis. Adjust accordingly.

The chassis is horizontal while the pivot is vertical.

7) Check that the machine body is level and the shaft is vertical;

8) Drill holes at the ground fixing positions of each full-height gate using a hammer drill, and insert M10 expansion bolts;

9) Check again that the machine body is level and the shaft is vertical, and pre-tighten the nuts. After debugging and functional testing are completed , tighten all expansion screws.

2.3 Turnstile debugging

- 1) Check the wiring: Check whether the power cord is connected correctly according to the wiring diagram. Power on the device only after confirming that everything is correct.
- 2) The unlocking time of the access control relay must be set to 0 seconds or 1 second;
- 3) The gate cannot be opened without swiping a card;
- 4) When a valid card is swiped, the indicator light above the card reader turns into a green arrow; if no card is swiped within 5 seconds, the gate closes.
- 5) Only one person can pass through after swiping the card , and the gate rotates smoothly.

2.4 Precautions for use

Please follow the usage requirements below to avoid unnecessary trouble:

- ❖ When the equipment is in the off state, it is strictly forbidden to push, pull or shake the gate forcefully;
- ❖ Please stand outside the passage and swipe your card. The card swipe must be completed within 1 second on the reader.
- ❖ Strictly adhere to the principle of one person, one card, and pass through in turn. You must wait for the person in front to pass before the next person can swipe their card to pass.
- ❖ Please pass through quickly after swiping your card; do not linger.
- ❖ Do not rinse the base of the turnout to avoid mud and sand getting into the bearings and causing damage.

3 Turnstile troubleshooting and maintenance

3.1 Turnstile troubleshooting

Fault 1 : The card reader lever cannot be pushed forward, it can only be reversed?

Analysis and handling method: Swap SW1 GND on the black box control board. The two gate opening signal input terminals are SW2 and GND.

Fault 2 : After swiping the card, the indicator light turns green, but the gate cannot be pushed open?

Analysis and troubleshooting method: Open the top cover of the cabinet, short-circuit SW1 GND and observe whether the solenoid valve opens. If it cannot open, first check whether there is voltage output on the two close 24V GND terminals of the controller, or check and replace the solenoid valve.

Fault 3 : The lever keeps turning even when pushed open without swiping a card?

Analysis and troubleshooting methods: 1. Open the top cover of the box, disconnect the battery cable, and turn off the power. If the solenoid valve is closed, the green circuit board needs to be replaced. 2. If the lever can still be pushed open by hand after turning off the power: check if the wire at the end of the solenoid valve is pulling the solenoid valve and preventing it from closing. Press and release the solenoid valve by hand, and check if there is a gap between the solenoid valve and the locking arm so that it can extend and retract flexibly. If it is not flexible, loosen the solenoid valve fixing screws and adjust the position.

Fault 4 : One indicator light is pointing in the wrong direction?

Analysis and troubleshooting method: Reverse the wiring of D1 and D2 on the control board.

Fault 5 : Why does it spin several times before closing after swiping the card?

Analysis and handling method: 1. Open the top cover of the cabinet, short-circuit SW1 GND solenoid valve to open automatically, then short-circuit POS. If the 12V port solenoid valve does not close, the control board needs to be replaced. If it closes immediately, the limit switch or travel switch needs to be adjusted to be closer to the intermediate rotary wheel.

Fault 6 : The system closes before the user can pass through after swiping their card?

Analysis and handling methods: 1. Open the top cover of the box and increase the distance between the travel switch or limit switch and the rotary wheel; 2. Open the time dial on the black box control panel to extend the time.

Fault 7 : The lever is difficult to push open after swiping the card?

Analysis and handling methods: 1. Check if the bearing at the bottom of the intermediate rotating shaft is rusty. If it is rusty and damaged, it needs to be replaced with a bearing of the same specification . 2. Check if the intermediate rotating gate is installed vertically. If it is not vertical, it needs to be adjusted.

Fault 8 : The lever can only be pushed open by pulling back after swiping the card?

Analysis and handling methods: 1. Check if the intermediate turnout is installed vertically. If not, it needs to be adjusted. 2. Press and release the solenoid valve by hand . Check if there is a gap between the solenoid valve and the locking arm so that it can extend and retract flexibly. If it is not flexible, loosen the solenoid valve fixing screws and adjust the position.

3.2 Turnstile maintenance

The turnstiles require regular maintenance by designated personnel and daily cleaning and upkeep to ensure long-term stable operation and extend their service life.

When performing maintenance

Maintenance and care methods:

- ❖ **Cleaning and hygiene:** Inspect the stainless steel surface of the turnstile and clean off any dust or other adhering particles ;
- ❖ **Bearings:** Inspect the movement of the bearings at the bottom of the shaft, remove rust and dust, and apply grease to prevent rust .
- ❖ **Screw tightening:** Check the connection of each moving part. If any loose nuts, screws or other fasteners are found , tighten them in time to prevent the gate from malfunctioning after long-term operation.
- ❖ **Circuit board cleaning:** Disconnect the power supply and use a clean brush to sweep away the dust on the circuit board.
- ❖ **Wiring inspection:** Check all connecting wires; if any are loose or disconnected, please tighten them.
- ❖ The mechanism and solenoid valve operate smoothly;

Note : This product is a highly technical device. Do not disassemble it without routine maintenance . If a malfunction occurs during use , please promptly notify our after-sales service department or authorized service center for assistance. Do not disassemble it yourself, as this may damage the internal structure or infringe upon your rights due to improper operation.