
Tripod Turnstile OPERATION MANUAL



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1. Introduction

The tripod turnstile is designed to be robust, reliable and attractive. Its rounded lines house a sturdy blocking mechanism that needs very little maintenance. The tripod turnstile has a standard electrical interface and integrates easily with systems that have read/write devices, such as access control, time and attendance, ESD, fare collection and biometric systems.

The tripod turnstile is designed to manage pedestrian flow at the entrances of industrial facilities, banks, administrative buildings, retail outlets, railway terminals and airports, and it provides free passage in emergency situations. For fast and convenient passage, we recommend installing one tripod turnstile for every 500 people working the same shift, based on a maximum working load of 30 persons per minute. See Chapter 4 for the throughput capacity of the tripod turnstile.

The tripod turnstile you purchased was developed and produced in accordance with the CE quality management system, and it has passed strict inspection.

The product uses advanced technology. To ensure safe and reliable operation, this Manual includes special precautions for operating the system. Please read the Manual carefully before using the equipment. Improper use of the equipment may affect your rights.

This Manual gives a detailed description of the operation and components of the tripod turnstile.

2. Warranty

The manufacturer guarantees that the tripod turnstile complies with the applicable statutory safety and electromagnetic requirements, provided that the instructions for storage, installation and operation are followed.

The warranty period is 12 (twelve) months from the date of sale. We will repair or replace any defective product at our discretion, provided it is returned to our factory. Please contact our service department before returning any product.

3. Safety Precautions and Requirements

3.1 General Safety Notes

The tripod turnstile has been designed, built and tested according to the latest technology. It leaves the factory in fully operational and safe condition, but it must be installed correctly. Please read the operating instructions carefully and follow the safety notes.

The manufacturer accepts no liability, and the warranty does not apply, in cases of incorrect use or use for purposes other than those intended.

The electrical power used in this equipment is at a voltage high enough to endanger life. Before any maintenance or repair, isolate the equipment from the electrical supply and test to confirm that the isolation is complete.

Read the instructions in this Manual carefully before assembling and installing the tripod turnstile. This will extend the life of the product and help you take full advantage of its features.

3.2 Safety Notes

- Disconnect all external opening and closing devices (access control, control desk, etc.) during maintenance work.
- Do not install the tripod turnstile without mounting it properly to the foundation.
- A main power switch or residual current device is required.
- Before commissioning, test all electrical and functional features.
- The electrical wiring of the tripod turnstile must comply with the included drawings.
- Only certified and trained electrical technicians may make the electrical connections.
- Only certified and trained electrical technicians may remove the covers for the mains plug, mains receptacle or wiring.
- During maintenance work, check the fixing bolts and tighten them if necessary.
- Do not touch current-carrying components such as the switching power supply, solenoids, resistors, motor stator housings and lamps while they are at operating temperature. They can cause skin burns.
- Do not sit on the barrier arm or press on it with force. This may damage the tripod turnstile.
- Use the equipment interface correctly according to its electrical

characteristics. Incorrect use may damage the equipment and the user's other equipment.

- The tripod turnstile is not explosion-proof. Do not use it in an environment with a risk of flammable materials or explosion. Products of other types are available for such environments.

3.3 Installation Safety Requirements

Qualified personnel must carry out the installation after studying this Manual carefully.



Warning!

- Connect all cables only when the AC mains power supply is switched off.
- Use only serviceable tools for installation.
- Follow general electrical safety rules when laying out the cables.
- Before powering on the tripod turnstile for the first time, make sure it has been installed and connected correctly.

3.4 Operation Safety Requirements

Follow general electrical safety rules when operating the tripod turnstile.



Do not use!

- Do not use the tripod turnstile under conditions that do not meet the requirements of Chapter 3 of this Manual.
- Do not use the tripod turnstile with a supply voltage that does not meet the requirements of Chapter 4 of this Manual.

Safety requirements for the power supply units are given in their certificates.

4. Product Description

4.1 Standard Features and Functions

- Obstacle detection with an audible alarm, for easy use and maintenance.
- The running status of the device can be set using the built-in keypad on the main control board.
- Multiple operating modes and functions. The tripod turnstile can be

programmed for bi-directional access or for exit by sensors.

- Bi-directional, reverse-direction intrusion and bi-directional tailgating functions deny unauthorized access.
- The barrier stays locked in the closed position to prevent forced intrusion until a valid open signal is received.
- Timeout reclosing: if the barrier does not detect a pass within the set time, it closes automatically. The default is 10 seconds (adjustable from 1 to 60 seconds).
- By mechanical design, the arm drops automatically when power fails, with no backup battery needed, for fire safety. The unit can be preset as fail-safe or fail-secure. The arm rises automatically when power is restored.
- Emergency escape function: when power is off, the barrier opens automatically to meet fire protection requirements. The barrier also opens when the emergency button is pressed, whether the power is on or off. The button can be remote-controlled. (Optional)
- Standard fire alarm input interface. It requires a normally closed (N.C.) contact.
- The tripod turnstile integrates easily with third-party equipment that has read facilities, such as biometric readers, consumption systems, ESD systems and access control systems.
- The tripod turnstile can be connected to several reader devices at the same time. Fast identification technology accurately and efficiently identifies magnetic cards, bar code cards, ID/IC cards, fingerprints, faces and more.
- Operation mode: each direction can be set to controlled mode or free mode. One or both directions can be controlled by a switch button or an access controller.
- LED indicators: traffic lights on both sides of the tripod turnstile show the access status. A green light means pass and a red light means no entry. The lights on both sides can be set to indicate left access, right access or both directions.
- Normally open and normally closed working modes.
- ADA-compliant passageway width of 510mm available.
- Remote control and management through a management computer.

4.2 Customized Features and Functions

- Alternative materials, finishes and custom design
- Usage counter function
- Remote-controlled button
- Access control and biometric system integration

4.3 Frame Specifications

- Frame: 304 stainless steel (default); 201 or 316 stainless steel (optional)
- Plate thickness: 1.5mm (default)
- Finish: ① stainless steel surface: brushed or polished (default); ② any color baked paint or anti-fingerprint surface (optional)
- Dimensions (L×W×H): L420×W330×H1000mm (default)
- Arm material: 10mm acrylic or steel available
- Arm extension length: 510mm (default)
- Inductive card reader size: supplied with standard mounting brackets, or custom-made
- Reader mounting: readers can be mounted on the surface of the tripod turnstile, flush mounted or rack mounted. An output is provided to interlock the readers.

4.4 Electrical Specifications

- Machine core: German-technology mechanism or anti-collision mechanism (optional)
- Input power: AC220V±10%, 50Hz±10%
- Drive motor: 24V DC brush motor
- Main board voltage: 12V DC
- Pass rate: 35 persons per minute
- Passage width: 550mm (standard)
- Arm rotation angle: 120°
- Direction: unidirectional or bi-directional
- MTBF: minimum 5 million cycles
- Barrier open/close speed: 1 second (adjustable)
- Time to reach running state after power on: 3 seconds
- Automatic reset time after a failure: 10 seconds
- Input port: relay dry contact signal; +12V level signal or pulse width >100ms; DC12V pulse signal
- Communication port: RS485 standard, communication range ≤1200m
- Operating temperature: -30°C to +60°C
- Relative humidity: less than 90%, non-condensing
- Working environment: indoor or outdoor (with shelter)

5. Equipment Definition

5.1 Definition of Entry and Exit

- (1) Entry: passing through the barrier passage from outside the controlled area into the area controlled by the product, as shown in Fig. 1.
- (2) Exit: passing through the barrier passage from inside the controlled area to the area outside the control of the product, as shown in Fig. 1.

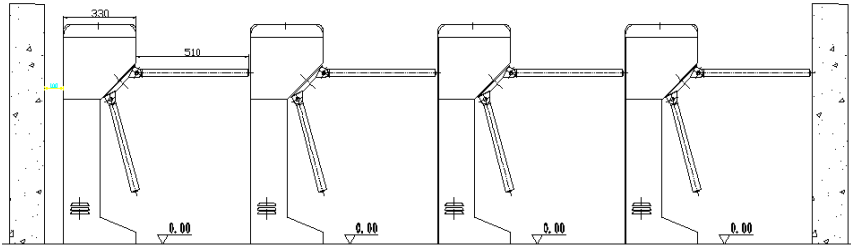


Fig. 1 Definition of Entry and Exit

5.2 Operating Modes

The tripod turnstile provides bi-directional access control. Each direction can be in one of three states:

- (1) Free passage: all persons are authorized to pass under all conditions
- (2) Controlled access: each person must use a card reader before being authorized to pass
- (3) Lane closed: no one is authorized to pass, and security cards are ignored

5.3 Outline Dimensions

The tripod turnstile is available in a full range of types and specifications, which are shown in Fig. 2.

Types and specifications also vary depending on the reader equipment installed.

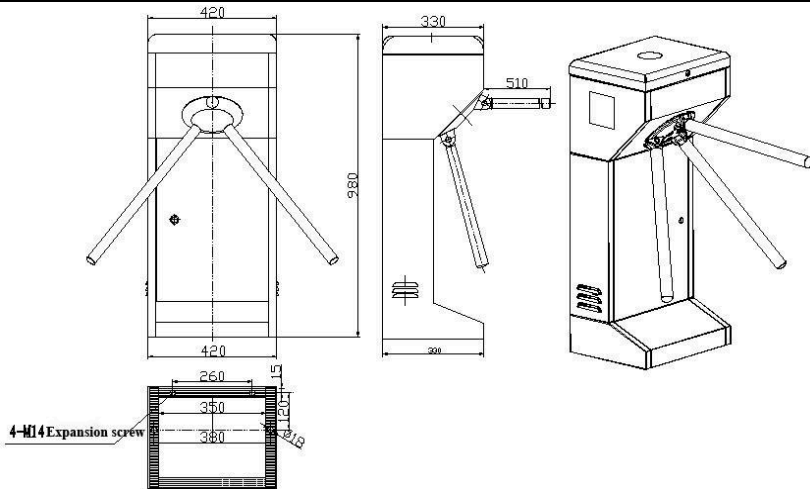


Fig. 2 Outline Dimensions of the Tripod Turnstile

6. Equipment Assembly and Installation

6.1 Installation Details



Caution!

Follow the safety requirements during installation (see Chapter 3).

Correct installation ensures the proper function and service life of the tripod turnstile. Please study and follow the installation instructions carefully.



Caution!

The manufacturer is not liable for any damage caused by improper installation, and rejects any claims arising from installation that does not follow the instructions in this Manual.

6.2 Installation Procedure

(1) Prepare the installation tools and sort the accessories according to the packing list;

- (2) Plan the system, then determine the installation location according to the system composition, operation mode and application site;
- (3) Determine the installation hole locations according to the installation requirements in Fig. 3. At each location, bury 4×M12 anchor bolts or 4×M12 expansion bolts in advance, as shown in Fig. 4;
- (4) Run the power cables and the low-voltage signal cables separately through 3/4" PVC tubes, and bury them in concrete at the corresponding positions;
- (5) Move each cabinet to its installation position and align it with the anchor bolts;

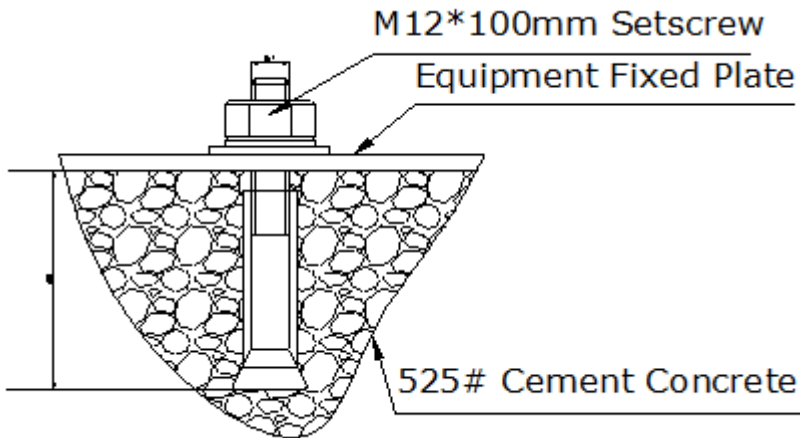


Fig. 4 Foundation Diagram for Ground Foot Installation



Notes:

- (1) AC220V power supply conduit: use RVV3×1.0 power supply cable.

- (6) Check the system composition and operation mode, and continue only after confirming they are correct;
- (7) Open the cabinet door and select one unit as the reference (the middle unit is best). Align the bolt holes in the chassis with the anchor bolts, then tighten the

nuts.

(8) Open the adjacent cabinet door. Align the bolt holes in the chassis with the anchor bolts, line the unit up with the reference unit, and tighten the nuts loosely. Install any remaining units in the same way;

(9) As shown in the system connection diagram (Fig. 6), connect the power cable and control cable to the connection socket on the main controller board of the tripod turnstile, and connect the protective ground wire properly;

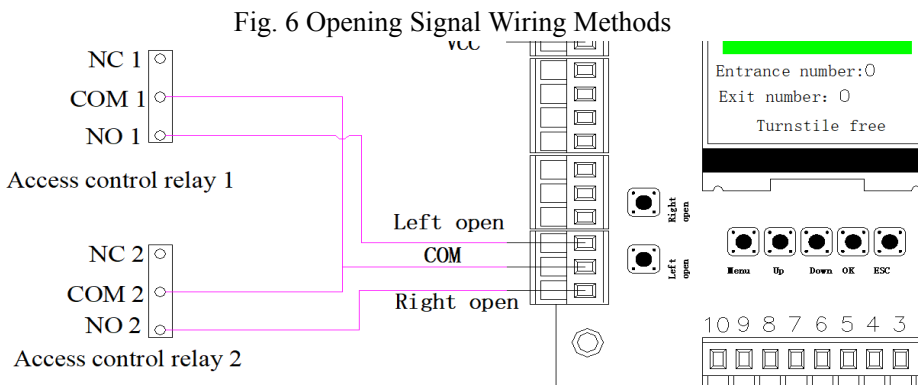
(10) After checking the status and adjusting the functions, tighten the anchor bolt nuts.

6.3 Opening Signal and Communication Port Wiring

(1) Input port: relay dry contact signal; +12V level signal or pulse width >100ms; DC12V pulse signal; drive current >10mA;

(2) Wiring: refer to the wiring diagram (Fig. 6) to connect the barrier opening signal to the communication port. There are three wiring methods, as shown below (Fig. 6).

- A) Relay dry contact signal: use 'VDD' as the common port. Short 'OPE-L' or 'OPE-R' to open for Entry (leftward) or Exit (rightward).
- B) +12V level signal or DC12V pulse signal: use 'GND' as the common port. Short 'OPE-L' or 'OPE-R' with a high/low pulse loop to send the open signal. (Note: apply the high frequency to 'OPE-L' or 'OPE-R'.)
- C) Communication cable: connect the two ends directly, one-to-one (see wiring diagram Fig. 7 or Appendix B). Set the direction by configuring master or slave.



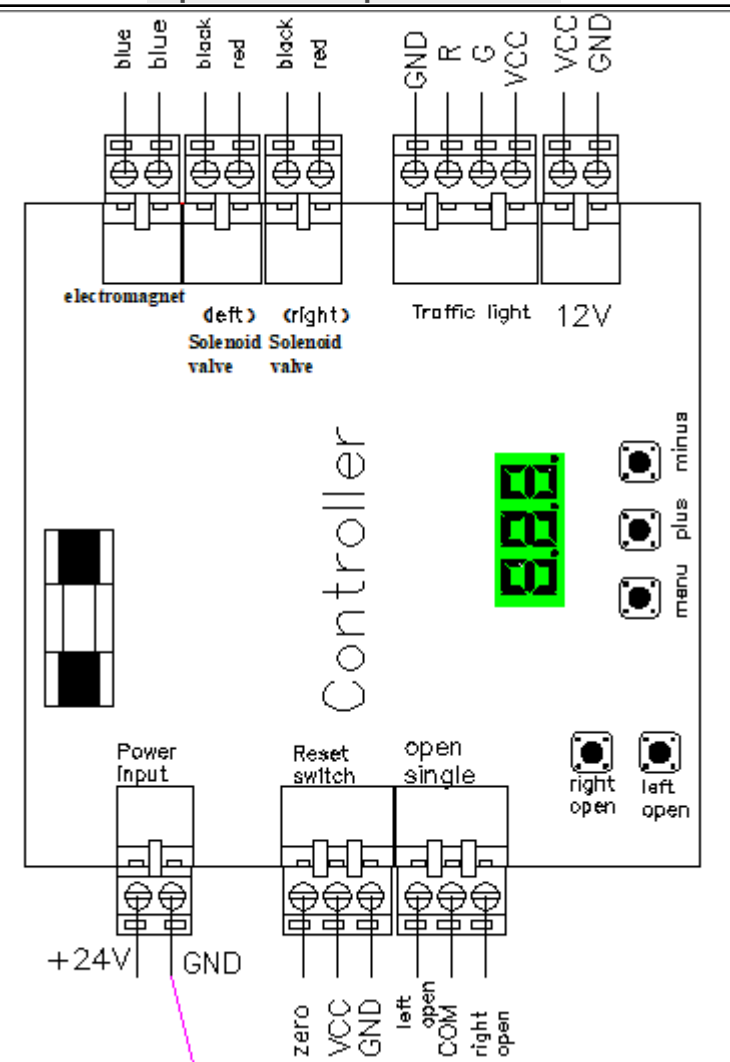


Fig. 7 Wiring Connection Between Devices

- (3) Check carefully that the connection cables match the wiring diagram, that all plugs are correct and that all devices are reliably grounded. If everything is correct, turn on the power and test the devices.



PRECAUTIONS:

- (1) PVC tubes must be buried more than 60mm deep and extend more than 50mm

above the ground. Bend the tube exit downward so that water cannot run in.

(2) Carry out all of the operations above with the power off. Make sure the protective ground wire of the system is connected correctly and firmly.

(3) If the equipment is used outdoors, prepare a concrete installation platform 100mm to 200mm high at the installation location to keep out moisture. Also install a rainproof cover, such as a sun shade plate, above the equipment. Do not use the equipment directly in an exposed environment.

7. Commissioning

Once the mechanical and electrical installation of the tripod turnstile is complete, it can be put into service.

7.1 Checking the Wiring Connections

Check carefully that all wiring is connected correctly according to the diagram, that the connectors are not loose and that the equipment is well grounded. If everything is correct, power on and test the devices.

Make sure the equipment is reliably grounded. Do not start commissioning until it is.

7.2 Function Testing

7.2.1 Check the external entry opening signal and exit opening signal.

7.2.2 Without a valid access controller signal, an audible signal announces unauthorized use. (An extended voice prompt module is available.)

7.2.3 Persons with a valid access controller signal may pass through. After a valid access controller signal is identified, the direction indicator turns green and the barrier opens. The system then starts a delay routine. If a person passes through within the set time (menu P03 value), the tripod turnstile closes and the green arrow changes to a red prohibition mark. If no one passes through before the timeout (menu P03 value), the tripod turnstile closes automatically and the green arrow changes to a red prohibition mark.

7.2.4 If two people pass through very close together within the set time, the system counts them as one person.

7.2.5 The barrier opening and closing speed can be adjusted. For details, see

7.3 Operation After Power On

Normally closed model: the arm rises automatically after power on and drops automatically when power fails.

Normally open model: the barrier opens automatically after power on and stays open.



Precautions:

- (1) Do not use the system during lightning. Lightning may damage the tripod turnstile.
 - (2) Connect the protective ground of the system reliably to prevent personal injury.
-

8. Main Controller Board Parameter Settings

8.1 Menu Setting Instructions

Control panel buttons: “**MENU**” menu button, “**INC**” up/increase button and “**DEC**” down/decrease button. There are 3 buttons in total.

Function of each button:

- “**MENU**” button: 1. In standby mode, press this button to enter the system menu.
2. In the system menu, select the menu you want and press this button to enter its parameter setting screen.
3. After setting the parameter, press this button to save it and return to the system menu.

“**INC**” button: scrolls up through the system menu and increases the parameter value by 1.

“**DEC**” button: scrolls down through the system menu and decreases the parameter value by 1.

NOTE: In the system menu and menu setting screen, if no key is pressed for 5 seconds, the system exits the menu automatically and returns to the standby screen.

For example, to change the pass time of the tripod turnstile:

1. Press “MENU” to enter the system menu, then use “INC” and “DEC” to scroll to the “F 0 1” menu (see the menu descriptions below).
2. Press “MENU” to enter the pass time setting.
3. Use “**INC**” and “**DEC**” to increase or decrease the pass time value.
4. After setting the value, press “MENU” to save it.
5. To exit the menu, scroll to the “F 0 7” menu and press “MENU”, or wait 5 seconds without pressing a key and the menu will close automatically.

8.2 Controller Parameter Settings

A. The LED displays <Run> after the control panel is powered on.

B. System menu descriptions:

1. “**F 0 1**”

Sets the access time. After a card is swiped, a person can pass within this time. If no one passes within this time, the tripod

turnstile closes automatically. (Factory default: 5 seconds)

2. **“F 0 2”**

Allow or prohibit access. 0: prohibit both left and right. 1: allow both. 2: prohibit left, allow right. 3: prohibit right, allow left. (Default: allow both)

3. **“F 0 3”**

Work mode. 0: free passage (commonly used for turn gates). 1: the arm drops automatically when power is off. (Default: the arm drops automatically)

4. **“F 0 4”**

Memory function: sets whether entry and exit card swipes are remembered. When memory is on, swiping a card twice in a row allows 2 people to pass. When memory is off, swiping a card twice in a row allows only 1 person to pass. (Default: off)

5. **“F 0 5”**

Repeated open/close test, mainly used to test the stability of the control board and for aging tests.

Note: In test mode, press the MENU button to exit the test.

6. **“F 0 6”**

Light panel display mode. 0: standard light panel. 1: light panel from another company (new version only).

7. **“F 0 7”**

Exit the menu, or exit automatically after 5 seconds without a key press.

8.3 Reset Sensor Switch Position Adjustment

When the arm rotates through its angle, the reset photoelectric switch sends a reset signal to the main board. The main board then signals the solenoid valve, which immediately releases the positioning arm lock.

The rotation angles of the left and right barrier arms must be appropriate.

8.4 System Function Test

1) Left-side opening: when a left opening signal is received, the tripod turnstile unlocks automatically and the direction indicator changes to a green pass mark, waiting for a pedestrian to enter. When the pedestrian pushes the tripod turnstile through a certain angle, the reset photoelectric switch is triggered and the system locks the barrier automatically. The direction indicator changes to a red prohibition mark.

The maximum time for each pass is 10 seconds. (This parameter can be set by the user; 10 seconds is used as the example below.)

If no one passes within 10 seconds after a card swipe, the device resets automatically.

2) Right-side opening: when a right opening signal is received, the motor runs automatically to unlock the barrier and the direction indicator changes to a green pass mark, waiting for a pedestrian to enter. When the pedestrian pushes the tripod turnstile through a certain angle, the reset photoelectric switch is triggered and the system locks the barrier automatically. The direction indicator changes to a red prohibition mark.

If no one passes within 10 seconds after a card swipe, the device resets automatically.

3) Drop function test: cut off the power and the arm drops. When power is restored, the magnet produces magnetic force and the arm can be raised manually.

To raise the arm: press the lever down first, then lift it to the horizontal position until it locks in place.

4) Communication function test: set and test according to the communication function of the host computer software.

8.5 Notes

1) Do not add peripherals to the device without permission. Make sure the system is reliably grounded so that the device operates safely and reliably;

2) When the equipment is used outdoors, build a cement installation platform 100mm to 200mm high at the installation site to keep out moisture. Also install a rain protection facility, such as a canopy, above the equipment. Do not use the equipment in the open air without protection;

3) Do not use this equipment during thunder and lightning, to prevent damage to the tripod turnstile;

4) If any of the above guidelines are unclear, please contact the supplier.