User Manual

FBL200/300 Flap Barrier

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English

Thank you for choosing our product. Please read the instructions carefully before operation. Follow these instructions to ensure that the product is functioning properly. The images shown in this manual are for illustrative purposes only.

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1 Overview

1.1 Introduction

The channel gate is an intelligent channel management equipment developed and produced by our company for many years. The device organically integrates mechanical, electronic, microprocessor control and various reading and writing technologies. By configuring a variety of different reading and writing equipment, adopting reliable safety protection devices, real-time alarm systems and direction indicating interface, the intelligent control and management of the channel can be realized together in coordination.

The appearance of the equipment is stamped and formed by stainless steel plate, which is beautiful in appearance, rust-proof and durable, and adopts standard electrical interfaces to the outside. It can easily integrate bar code cards, ID cards, IC cards and other card readers on the equipment to provide access for personnel Civilized and orderly traffic while preventing illegal personnel from entering and exiting. In addition, the system is also specially designed to meet the fire protection requirements to ensure unobstructed passages and facilitate timely evacuation of personnel.

1.2 Features

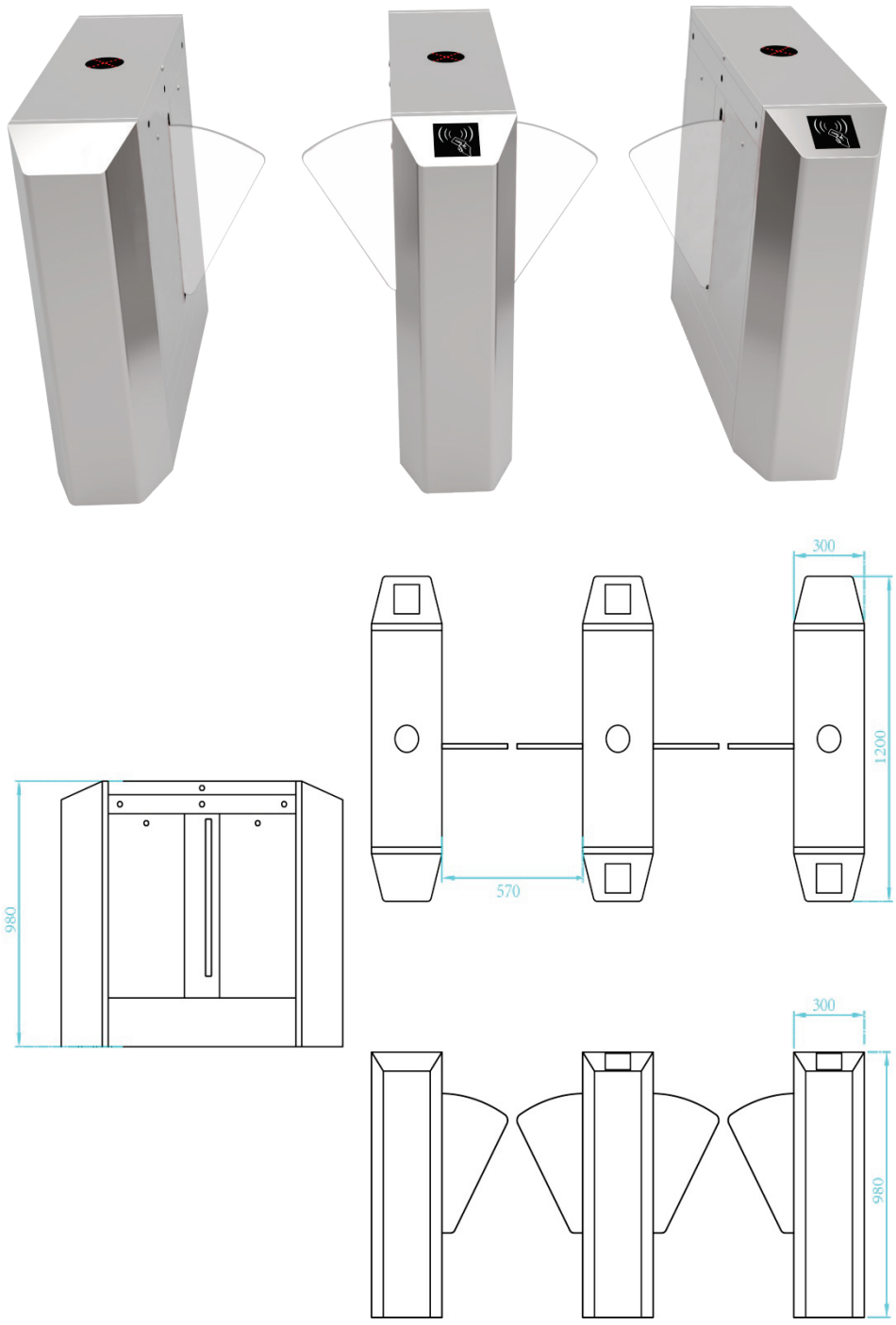
1. The illegal entry has an alarm prompt function.
2. Anti-shock function, when the opening signal is not received, the telescopic baffle is automatically locked.
3. Infrared/mechanical dual anti-pinch function, when the retractable baffle is in the process of resetting, the motor will automatically stop working within the specified time, and the strength is very small, and an alarm signal will be issued at the same time.
4. It has an automatic reset function. After a pedestrian reads a valid card, if the pedestrian does not pass within the specified time, the system will automatically cancel the pedestrian's permission to pass this time.
5. A unified standard external electrical interface, which can be connected to a variety of card readers, and can be remotely controlled and managed through the management computer.
6. With a fire-fighting function, it will automatically open the gate when it receives the fire-fighting signal. At the same time, the gate is equipped with a battery, and the gate will automatically open when the power is off.
7. The entire system runs smoothly and has low noise.

1.3 Technical Parameters

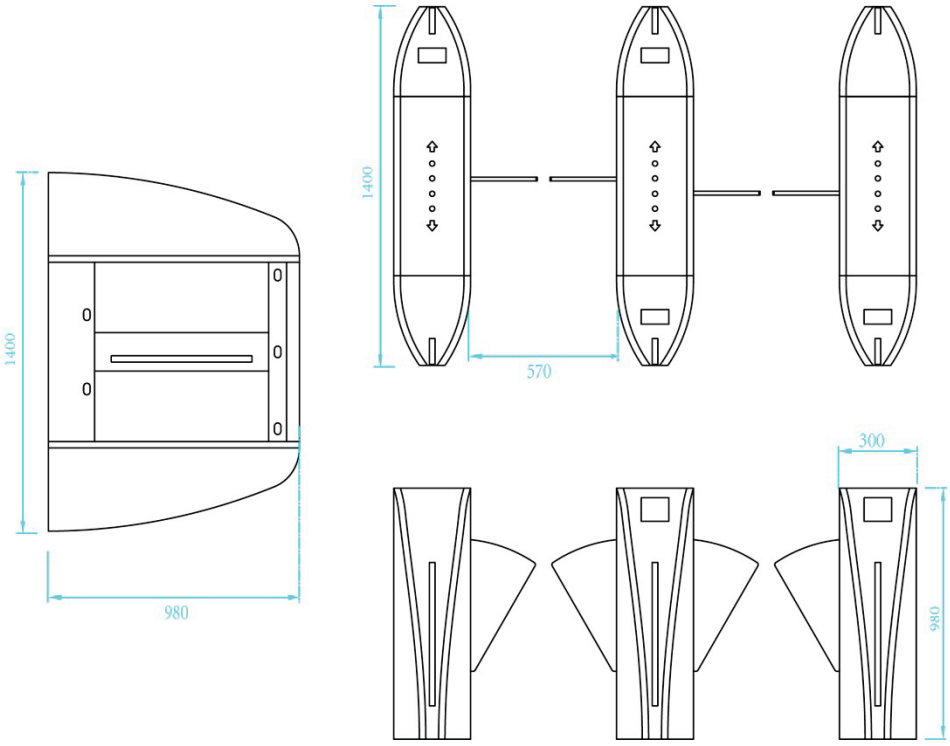
1. Power supply voltage: AC220±10% V, 50HZ
2. Drive motor: DC motor 24V/40W
3. Working environment temperature: -15 OC-60 OC
4. Relative humidity: relative humidity ≤90%, no condensation
5. Input interface: 12V level signal or pulse width＞100ms
6. Communication interface: RS232 communication, relay opening signal
7. Channel width: wing gate 580mm, wing plate 260mm
8. Passing speed: 30 people/minute (normally open mode), 20 people/minute (normally closed mode)
9. Gate opening and closing time: 0.8 seconds for wing gate

2 Product Dimensions

Reference drawing of outline dimensions of wing gate equipment



FBL200 Bridge angle wing gate (1200x300x980)



FBL300 Bridge angle wing gate (1400x300x980)

3 Product Structure and Working Principle

3.1 Channel Gate Mechanical System

The channel gate mechanical system is divided into two parts: the chassis and the movement. As the carrier, the case is equipped with direction indicators, read-write devices, infrared sensors, etc.; the main components of the movement include motors, racks, transmission shafts, gates, etc.

3.2 Channel Gate Electric Control System

The electric control system is composed of a card reader, main control board, infrared sensor, direction indicator board, alarm, limit switch, switching power supply, etc.

Card reader (self-provided): After reading the information on the card and after judgment and processing, it sends an application pass signal (switch signal) to the main control board.

- Main control board: The control center of the system, which receives signals from the card reader and infrared sensor, and after logically judges and processes these signals, it sends execution commands to direction indicators, motors, counters, and alarms.
- Infrared sensor: Detects the position of pedestrians and plays a role in safety protection.
- Direction indicator: Display the current status of the passage sign, and guide pedestrians to pass through the passage safely and orderly.
- Alarm: When the system detects a pedestrian entering the passage illegally, it will give an alarm.
- Limit switch: Control the position of the gate rotation.

3.3 System Working Principle

1. Turn on the power and the system will enter the working state after 3 seconds.
2. When the card reader reads a valid card, the buzzer will make a pleasant sound to remind pedestrians that the card reading is successful; at the same time, it will judge and process the information read from the card and send an application approval signal to the main control board.
3. The main control board receives the signals from the card reader and the infrared sensor, and after comprehensive processing, it sends effective control signals to the direction indicator and the motor to turn the direction indicator sign into a green arrow pass sign, and the gate sends a setting With voice, the main control board controls the operation of the motor, the limit switch controls the rotation angle of the motor, and the gate opens to allow pedestrians to pass.

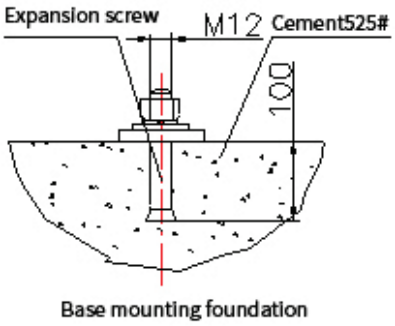
4. After the pedestrian passes the passage according to the direction indicator sign, the infrared sensor senses the whole process of the pedestrian passing the passage, and continuously sends signals to the main control board until the pedestrian has completely passed the passage.

5. If a pedestrian forgets to read the card or reads an invalid card and enters the passage, the system will prohibit pedestrians from passing through, and will issue a voice alarm (illegal intrusion, please swipe the card). The alarm will not be canceled until the pedestrian exits the passage; re-read the valid card before allowing passage.

4 Equipment Installation and Commissioning

4.1 Device Installation

- Prepare the tools for installing the equipment, and check the accessories according to the packing list.
- After clarifying the system composition and working methods, carry out overall planning and prepare to start installation.
- After finishing the foundation surface for installing the equipment, arrange the equipment.
- After locating the holes, drill the holes and embed M12 anchor bolts or expansion bolts.



- Thread the high-current cable and the weak-current cable with 3/4" PVC pipes and bury them in the corresponding positions with cement.
- Move each chassis to the corresponding installation position first align the anchor bolt positions one by one.
- Check whether the system composition and working method are correct, and then proceed to the next step after the check is correct.
- Open the cabinet door, choose one of the devices as the reference datum (preferably choose the middle one as the reference datum), align the bolt holes of the machine base with the corresponding anchor bolts, and pre-tighten the nuts.
- Open the door of an adjacent chassis, align the bolt holes of the machine base with the anchor bolts and align the set reference equipment, pre-tighten the nuts; if there is more than one need to install and so on.
- Refer to the wiring diagram, connect the power line and control line, and connect the system protection ground line.
- Tighten the anchor nut after the state inspection and function debugging are qualified.

Warning:

1. The depth of the buried PVC line pipe should be greater than 60mm, the height of the exposed ground should be greater than 50mm, and the outlet should be bent back to prevent the line pipe from entering the water.
2. When installing channel gates, the left and right gates of each channel should be aligned.
3. Connect the system protection ground wire.
4. If the equipment is used outdoors, a cement platform with a height of 100 to 200mm should be built at the equipment installation place to prevent moisture, and a roof and other sun-proof and rain-proof facilities should be added.
5. After the equipment is installed, it can be put into normal use only after the state inspection and function debugging are qualified.

4.2 Equipment Function Debugging

All function debugging can be carried out after the equipment status is checked normally!

- **Preparation before commissioning**

Check the mains wiring according to the wiring diagram. Check that the power wiring and other wiring of the entire device are correct. Power on and debug after confirmation! The protective ground of the equipment must be grounded reliably, otherwise it is not allowed to use it.

- **Instructions for parameter setting of gate**

After the control board is powered on, the LCD screen displays the default state, which displays the "working model" of the control board at this time (swing gate, side-opening swing gate, and swing gate), as well as parameters such as the number of passes through the entrance and exit.

There are 5 operation buttons on the control panel, "Menu", "Up", "Down", "OK" and "Cancel"。

- **Key Description**

Menu: Used to enter the menu setting items

Up: Used to move menu items up

Down: Used to move menu items down

OK: Used to enter the menu item setting item or confirm the current modified value

Cancel: Used to return to the previous menu or cancel the current operation

- **Menu operation**

Press the Menu key to enter the password entry interface, the default password is: up, down and down. Enter the 6-bit password and press OK to enter the menu. After entering the menu, press "Up" and "Down" to select a feature menu and then press OK to enter the function or value change interface, by pressing the plus or minus key to select or adjust to the corresponding value.

Example: To change the way the gate works: enter the menu, select the menu inside the "gate working mode" - press OK (show the current working mode) - then press OK to enter the modified working mode selection interface - press "up" or "down" to select the corresponding working method - press "OK" to modify successfully - press "cancel" exit after the setting is completed (without pressing the cancellation key, the system will automatically exit after 15 seconds).

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- **System menu description**

1. **In and out direction configuration**

Set the gate to the left for the entrance or exit, and on the right for the entrance or exit.

2. **Entry and Exit Pass Configuration**

Set whether both sides of the gate (inlet and exit) are allowed to pass.

3. **How the gate works**

Set the opening mode, open the gate for the infrared, or swipe the open the gate.

4. **Inlet memory function configuration**

Whether to have a memory function when opening or closing the entrance or exit pass, is generally used to swipe open the floodgates, in the case of one person's swipe has not passed, whether to remember other people's swipe situation. "Prohibited" is the first swiper to pass, the second person swipe can be effective, "allowed" for how many individuals swipe, that is, how many consecutive individuals are allowed to pass.

5. The length of time the entrance and exit is open

Set the opening of the gate, no one to pass, the gate automatically closed the length of time, the default 3 seconds.

6. Counter reset

Empty the number of inlet/exit passes and recount.

7. Device number

The device number of the control board. Generally do not use settings.

8. Device information

Displays basic information about the control board, such as type, model number, etc.

9. Gate type

Set the type of gate, a total of three types of "wing gate", "swing gate" (single swing), "open the gate"; The default is the Wing Gate type.

10. System initialization

Initialize the control board parameters, after the initialization is successful, the control board parameters resume factory settings.

11. Left pass voice

Set the voice that the gate needs to play when passing from the left. Such as: when passing from the left, let the gate play "Welcome".

12. Right pass voice

Set the voice that the gate needs to play when passing from the right. Such as: the right side of the passage to let the gate play "a safe journey."

13. Test voice

The voice inside the control panel is played automatically in turn, and exits automatically after playback.

14. Motor speed

Used to set the running speed of the motor, the smaller the value, the slower the speed.

15. Default

16. Motor maximum running time

Set the longest time the motor can run at a time (when the control board fails due to external detection or otherwise no signal) to prevent the motor from going idly by, defaulting to 10s.

17. **Allow infrared overlap time**

The setting allows the simultaneous blocking of 2 infrared times, due to the short spacing between some gate infrared (e.g. left infrared and anti-clamp close), to prevent the human body from blocking 2 infrared voice false positives at the same time.

18. **Delayed closing time**

Used to set the normal passage of people through the gate after how long to close the gate, the unit is "seconds", the default is 0, no delay, that is, people pass immediately after the gate.

19. **Default**

20. **Gate test**

Repeatedly open the gate test, mainly used to test the stability of the gate control board and aging test, the user does not need to use.

21. **Power-off opening setting**

22. **Wing gate infrared settings**

- 1 over the last pair of infrared gate
- 2 through the anti-clamp gate

23. **Illegal break-in operation**

- 1 Gate
- 2 Not gate

24. **Motor brake setting**

- 1 Close brake
- 2 Open brake

25. **Gate machine often open set the opening signal is greater than the change of value often open**

26. **Swipe when the alarm is set When the alarm is allowed to swipe or do not allow the swipe**

27. **Developer options**

Note:

1. No peripheral devices can be added to the system without permission.
2. During the debugging process, if the debugging result is inconsistent with the described function, please refer to the section on common faults and troubleshooting.

5 Equipment Operation Instructions

1. Before the equipment is put into use, it must pass the function debugging, and it can be put into use after the debugging is normal.
2. When the equipment is powered on, it is strictly forbidden to stand in the channel.
3. Pedestrians are not allowed to enter the passage when the direction indicator sign has not turned green when reading the cartoon line.
4. When a person passes through the passage, do not stay in the middle of the passage for a long time.
5. When passing through the gate, don't be crowded, and keep a certain distance between person.
6. It is strictly forbidden to pass through the gateway without reading the card.
7. It is recommended to mark the pass instructions of the machine at a conspicuous place where the equipment is working, and guide passers-by to pass through the gate channel safely and orderly.
8. The equipment must be properly managed when it is not working, and it is strictly prohibited to knock or shake the equipment.
9. When the equipment is closed, it is strictly forbidden to push, pull or hit the gate forcefully.

Warning:

1. Please do not use the machine when there is thunder and lightning, in order to prevent damage to the machine.
2. To ensure that the protected ground of the system is reliably connected to prevent personal injury.

6 Common Faults and Analysis

Proximity switch : (Wing brake is used for position control). There are 3 lines in total, including 2 power input, brown + 12V, blue: GND and 1 signal output. When the sensing head touches a magnet or metal object (sensing distance is 2-4mm), the output is + 12V, otherwise it is 0V.

Motor: The load current of DC24 V DC motor is about 300 Ma, and the load current is less than 1.2 A.

Cylindrical photoelectric switch: (the same as alarm and anti-pinch signal detection) is composed of a transmitter and receiver. The transmitter has 2-wire power input (brown + 12V, blue: GND), and the power supply indicator is normally on; at the receiving end, there are two line power input (brown + 12V, blue: GND) and one line signal output (black line). When the area is accessible, that is, when the area is isolated, there is signal output The indicator lights up and outputs + 12V, otherwise it is 0V.

Cylindrical reflective photoelectric switch: (the function is the same as above) there are 3 lines in total, including 2 power input, brown + 12V, blue: GND and 1 signal output (black). When a person passes through the reflective photoelectric switch (reflection distance is 10-20mm), the output is + 12V, otherwise it is 0V.

1. After power on, the brake arm rotates back and forth or there is no limit after opening

1) Determine whether the limit photoelectric switch is exposed to strong light (generally refers to outdoor installation and debugging).

2) Test limit photoelectric switch:

a. Check whether the limit photoelectric switch with zero position, left opening position and right opening position is powered on! Check the connection base for looseness or poor contact.

b. Put a piece of iron on the front end of the photoelectric switch (pay attention to be close to the detection surface) to see whether the light above the photoelectric switch is on. If not, it means the photoelectric switch is broken. If it is on, adjust the position of the photoelectric switch appropriately.

3) Check whether the connection between the limit photoelectric switch and the mainboard is reliable.

4) If the limit photoelectric switch and wiring are normal, the motherboard will be damaged.

2. After giving an effective opening signal, the gate has no action

1) The mainboard indicator light is normal, when the effective opening signal is given, the indicator light will turn into a green arrow, and the gate has no action.

Detection method: check whether the motor connection line is well connected. If the motor line is well connected, use a hand model of the end of the motor to check whether the motor is rotating. If the motor is rotating, it indicates that the motor line is connected in reverse. If the motor does not rotate, connect the positive and negative motor line. If the motor does not rotate, it indicates that the motor is damaged. If the motor rotates, it indicates that the main motor There is a problem with the motor driver chip on the board. Please contact us to replace the motherboard.

2) If there is a voltage on the 24 V terminal on the mainboard, check whether the fuse tube is normal. If the fuse tube is damaged, replace the fuse tube. If the fuse tube is normal, it indicates that the mainboard is damaged and replace the mainboard.

3. The gate is not reset after opening or reset immediately after opening to the position

When the pedestrian passes, the gate does not resume immediately, and the gate is closed after a certain time delay, indicating that the outgoing infrared works abnormally.

Detection method: first detect the cylindrical photoelectric switch and whether it is connected; when there is signal output, the left or right infrared indicator light on the mainboard will turn on, otherwise the mainboard will be damaged; check whether the parameters of the mainboard are set with memory.

After the gate is opened, when the pedestrian enters the channel, the gate will reset immediately, indicating that the left and right infrared are inversely connected. Check the connection with the mainboard.

4. The gate is not open after power failure

1) Test the voltage of the dry battery (not lower than dc9v).

2) Check whether the circuit is loose or desoldered, and detect the voltage output at both ends of the battery terminal (not lower than dc9v), otherwise the control board will be damaged.

5. The swing arm is not limited after power failure and reversed after power on

1) Test the voltage of dry battery (not lower than dc9v).

2) Detect the photoelectric switch and main board of the left and right switch in place respectively; (see 1)

3) The swing arm is reversed and the motor line is reversed.

6. When it is used online, the cylindrical photoelectric switch will be opened

The machine has been switched to infrared switch on mode. Enter the menu to change the working mode of the brake to swipe the card.

7. The two gates are not synchronized when they are on-line

Check whether the online line is loose or loose, and whether the line sequence is one-to-one corresponding.

8. After swiping the card to open the gate, the gate shall not be opened until the access control panel is closed

Enter the menu to change the type of gate opening signal to high-level opening.

9. The gate is not closed for a long time after opening

1) When there is no communication: check whether the opening time of the entrance and exit is too long (refer to the operating instructions of system parameter setting);

2) When someone is passing: check whether there is 12V voltage at the black output signal terminal of the anti-pinch infrared photoelectric switch (0V under normal condition), otherwise the transmitting end or receiving end of the photoelectric switch will be damaged.

10. Alarm when pedestrian passes through the gate

1) Check whether the opening time of the entrance and exit is set too short (refer to the operating instructions of system parameter setting).

2) Check whether the incoming and outgoing infrared photoelectric switch is wrongly connected, that is to say, the incoming photoelectric switch signal is wrongly connected to the outgoing direction, and the outgoing signal is wrongly connected to the incoming direction, thus causing a false alarm.

7 Wiring Diagram

Check circuit according to the following wiring diagram: