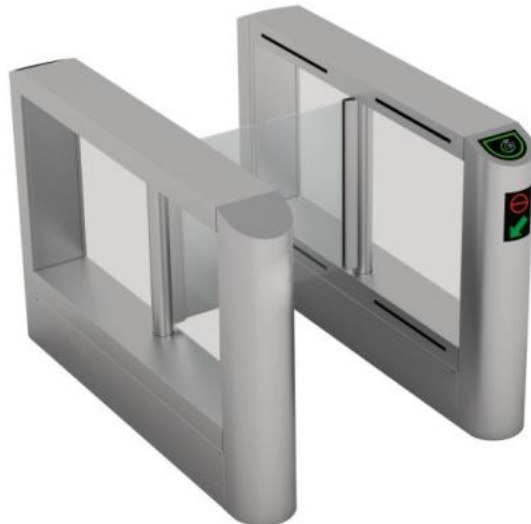


TURNSTILE

Security Systems Inc.

OPERATING MANUAL OF OPTICAL TURNSTILE 6000 – GB1





Turnstile Security Systems Inc.

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1. Introduction

The Optical Turnstile was developed to be robust, reliable and esthetically pleasing. Its rounded lines house a sturdy blocking mechanism designed for very low maintenance. The equipment is provided with a standard electric interface and is easily integrated into a system with write/read facilities such as magnetic card, bar code card, ID card and IC card. The product is of a series one and there are multiple types and specifications for your choice. It can be used widely in the sites requiring intelligent management for the passage such as hotel, school, factory, mine, underground and guest house, etc.

The Optical Turnstile you purchased is researched and produced in accordance with CE quality management system and is a product having gone through strict and careful inspection.

The product is equipped with sophisticated technology. To ensure a safe and reliable operation and to ensure the safety operation, the operation manual is provided with special precautions for the operation of the system. It is recommended that the user read carefully the operation manual prior to application of the equipment, otherwise, your right may be infringed due to an improper application of the equipment.

This manual presents a detailed description of Passage Turnstile operation and components. To get to know other CMOLO products, please visit our website at www.turnstilesecurity.com

2. Safety Precautions

2.1 General safety notes

The Optical Turnstile has been designed built and tested according to the latest technology. Although it has left the factory in a fully operational and safe condition, it is important that the installation is carried out correctly therefore the operating instructions must be read carefully and the safety notes must be observed.

Any liability and warranty is declined by the manufacturer in the case of incorrect use and use for purposes other than intended.

The electrical power used in this equipment is at a voltage high enough to endanger life. Before carrying out maintenance or repair, you must ensure that the equipment is isolated from the electrical supply and tests made to verify that the isolation is complete.

Carefully read the instruction in this manual before assembling and installing the Passage Turnstile. This will extend the life of the product and will enable you to fully benefit from all its features.

2.2 Safety notes

- Disconnect all external opening or closing devices (access control, control desk, etc.) during maintenance work
- It is prohibited to install the passage turnstile without proper mounting to the foundation
- A main power switch or residual current operated device is compulsory
- Before commissioning make sure all electrical and functional features are tested
- The electrical wiring of the passage turnstile must comply with the included drawings
- Only certified and trained electrical technicians may perform the electrical connections
- Only certified and trained electrical technicians may remove covers for mains plug mains receivers or wirings
- During maintenance work the fixing bolt must be checked and tighten, if necessary.
- Current carrying components like switching power supply, motor, resistors, stator housings of motors, lamps etc. shall not be touched while in operating temperature condition; this can cause skin burns
- During application of the product, it is prohibited to sit on or press with force on the swing barrier, otherwise, unnecessary damage may be caused to the passage turnstile.
- It is recommended to use correctly the equipment interface regarding to the electric characteristic, otherwise, damage to the equipment and other equipment of the user may be resulted.
- The equipment is not equipped with explosion-proof design, and it is not allowed to apply the equipment to an environment with danger of inflammable or explosion. However, it is optional for the user to purchase products of other type for the purpose.

3. Product Description

3.1 Technical Details

- 1) Rapid identification technique, available to identify accurately and efficiently the magnetic card, bar code card, ID card and IC card.
- 2) With normally open & normally closed working mode
- 3) Real time failure self-detect and alarm indication, ensuring system safe operation and facilitating maintenance and operation.
- 4) With direction indication, guiding passenger to entry and exit.
- 5) Automatic counting and displaying number of passenger, facilitating observation and with a

- displaying total amount as high as 90,000. (Optional)
- 6) Sound/light (Light is optional) alarm indication function, preventing illegal entry or irregular passing.
 - 7) Powerful on-line intelligent control mode, facilitating you:
 - A. To set up operation mode for passage entry and exit.
 - B. To read a card of multiple times, the special function meeting the application requirements of a particular site.
 - C. To set up the card reading with or without memory.
 - D. To select a reasonable normally open or close mode, to divert effectively the flow of passengers.
 - E. To have humanized setting function for reset of over time passing.
 - 8) After the system power is cut off, the plate barrier starts the standby power to withdraw the barrier, so that the passage is ensured to be smooth and to divert the flow of passenger timely.
 - 9) The infrared sensing technique realizes real time monitor of passage, safe protection and tail-proof.
 - 10) The treatment mode in emergency or in special conditions.
 - 11) Having standard input/output port, facilitating the integration of the system and the other equipment, available for far end control and management.
 - 12) Super strong combination capability, with the combined application of products of different passage types and series, not affecting the system performance.
 - 13) Strong system expanding capability, available to add new product at any time.
 - 14) Far end control management: function to far end control of barrier mode, meeting the special requirements of the users and the fire protection.

3.2 Main Technical Specifications

- 1) Machine center: Germanic technological motor
- 2) Power voltage: AC100~110V / 230VT
- 3) Driven motor: Brushless & slotless DC motor
- 4) Operation environment temperature: -15degree ~60 degree
- 5) Relative humidity: less than 95% not condensed
- 6) Passage width: 650mm – 1015mm
- 7) Passing speed: 20-40 person/m
- 8) Main-board voltage: 24VDC
- 9) Driving Motor: DC Motor 15W/24V
- 10) Max current: 5A
- 11) Control panel with count and LED digital function
- 12) Control panel with alarm and sounds indication functions
- 13) Emergency and Traffic-light function

- 14) Working Environment: Indoor/Outdoor (with rain-tent cover)
- 15) Input port: dry contact signal; +12V level signal and pulse width > 100ms, DC12V pulse signal;
- 16) Communications port: RS232/RS485 electric standard, communications range: ≤1200m.

4. Equipment Definition

4.1 Product Classification

It may be divided according to the combination type of core mechanism: single-core swing barrier and dual-core swing barrier.

Single-core swing barrier: the swing barrier only equipped with single-core in the cabinet (as shown in Fig.1);

Dual-core mechanism swing barrier: the swing barrier equipped with independent dual-core in the cabinet (as shown in Fig.2);

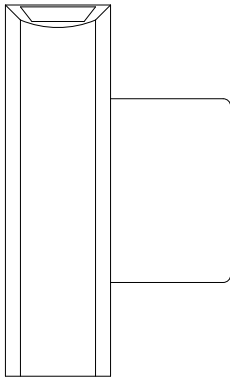


Figure 1

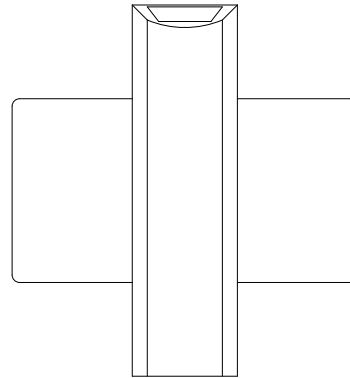


Figure 2

4.2 Term Definition of Passing Mode

Controlled: the passenger can only be allowed to enter the entrance of the passage after the card is effective read at the reading device;

Free: the passenger is allowed to enter the entrance of the passage only by following the direction indication, needing no card reading;

Bar: no passenger is allowed to enter the entrance of the passage;

Entry: the direction way passing through the barrier passage from outside the control area and entering into the area controlled by the product as shown in Figure 3.

Exit: the direction way passing through the barrier passage from inside the control area and going into the area outside the control of the product;

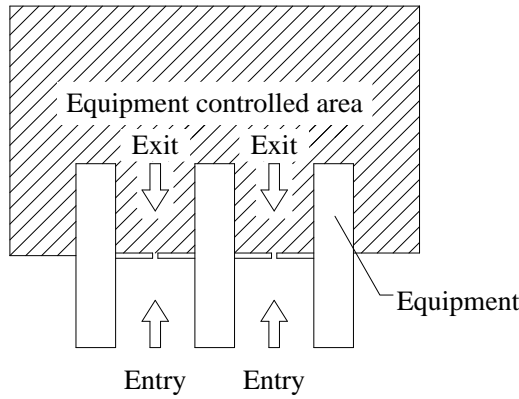
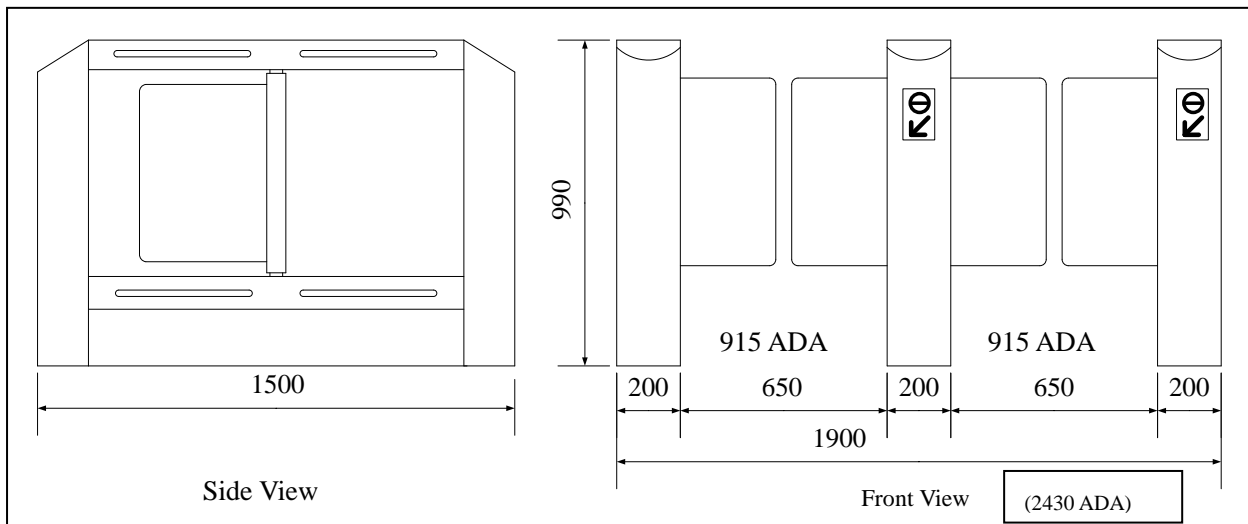


Figure 3

4.3 Equipment Outline Dimensions

Passage Turnstile is with a complete set of types and specifications and can be divided into types as given below. Figure 4 shows the outline dimensions of CPW-322DS.

Besides, there are also different types and specifications depending on different read/write



equipment installed.

Figure 4

5. Product Structure and Operation Principle

5.1 Product Structure

The structure of the product is mainly composed of mechanical system and the electric control system.

5.1.1 The structure of mechanical system

The mechanical system is composed of cabinet and core mechanism. The cabinet is equipped with

counter, directional information device, light/sound alarm device, infrared sensor and door lock. The core mechanism is composed of motor, reducer, chassis, transmission, axle, barrier, etc.

5.1.2 Electric control system

1) Composition and function of electric control system

Electric control system is mainly composed of access control device (optional), main control board, infrared sensor, driving board, motor module, directional indicator, counter, alarm, voice board, limit switch and switching power, of which the function of the main components are given below:

- ◆ Access control device: To read the information on the card and issue barrier open signal to the main control board after signal processing;
- ◆ Main control board: As a control center of the product, it receives the signals from the access control and infrared sensor and carries out signal processing, and then, it issues executive command to the direction indicator, motor driving board, counter and alarm.
- ◆ Infrared sensor: It detects the location of the passenger, and plays a safe protection function. The sensors at the both terminals of the passage determine the location of the passenger, and the medium sensor mainly functions as safe protection;
- ◆ Motor driving board : It receives signal sent from the main control board and the limit switch and controls the motor running, realizing barrier open/close;
- ◆ Direction indicator: It indicates the present status of passage, and guides the passenger to pass the passage orderly and safely;
- ◆ Counter (optional): It records the number of passenger effectively passing a certain passage in the same direction;
- ◆ Sound/light (optional) alarm device: It delivers alarm indication signal for the illegal passenger;
- ◆ Encode: It controls the rotation position of the barrier;

2) Connection diagram

Each passage is equipped with a set of electric control system, with the electric control devices installed respectively in the main cabinet and sub-cabinet as shown in Appendix B.

5.2 System Operation Principle

- 1) Turn on the power, 3 seconds later; the system enters into operation mode.
- 2) After the legal card reading for the passenger, the system delivers to the main control board the barrier open signal;
- 3) The main control board receives the information from the card reader and infrared sensor and carries out signal processing, and then, it delivers control signal to the direction indicator, driving board, controlling the indication mark changing from red into green. At the normally close mode, it controls the driving board to drive the motor running and to open barrier (at normally open mode, no action for the barrier), allowing the passenger to pass through.
- 4) After the passenger passing through the passage in accordance with the direction indicator mark, the infrared sensor detects the complete process of the passenger passing through the passage, and issues signal continuously to the main controller board, until the passenger passes through the passage completely.
- 5) After the passenger passes through the passage completely, the main controller board delivers a signal to the counter, which will increase 1 automatically, ending the passing process.
- 6) If the passenger forgets to read card, or reads with an illegal card when passing through the passage, the system will bar the passing of the passenger (at normally open mode, the barrier will close, and at normally close mode, the barrier will not act). At the same time, sound/light alarm signal will be given. The alarm signal will not be cancelled until the passenger retreats from the passage and the passing is only allowed after reading again the effective card.

5.3 Product System Composition

Single-passage management system is composed of two single-core mechanism swing barriers Fig.5.

Multi-passage management system is composed of two dual-core mechanism swing barriers and multiple dual-core mechanism swing barriers as shown in Fig. 6.

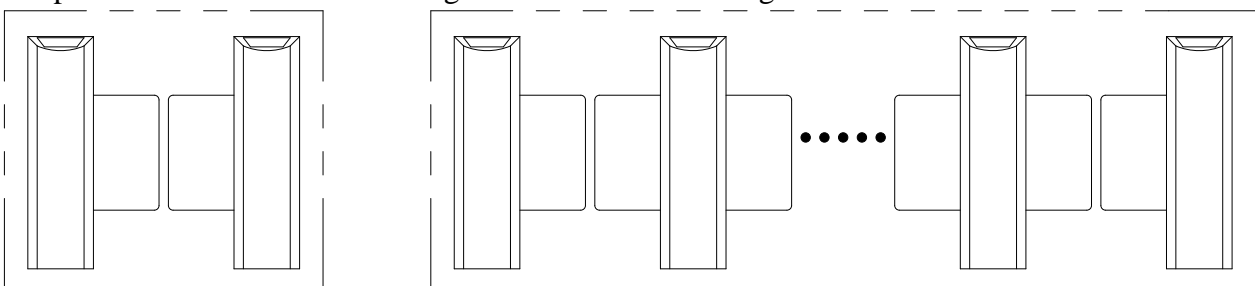


Fig.5

Fig.6

6. Product Installation and Adjustment

6.1 Product Installation

- 1) Prepare the tools for product installation and sort out the auxiliaries according to the packing list;
- 2) Determine the system composition and operation mode, and prepare to install after carrying out the system planning;
- 3) Drill the holes after determining the hole positions and bury before hand (N+1)X 4 pieces of M12 ground bolts or inflated screw bolts (as shown in Figure 7, N indicating number of passage);

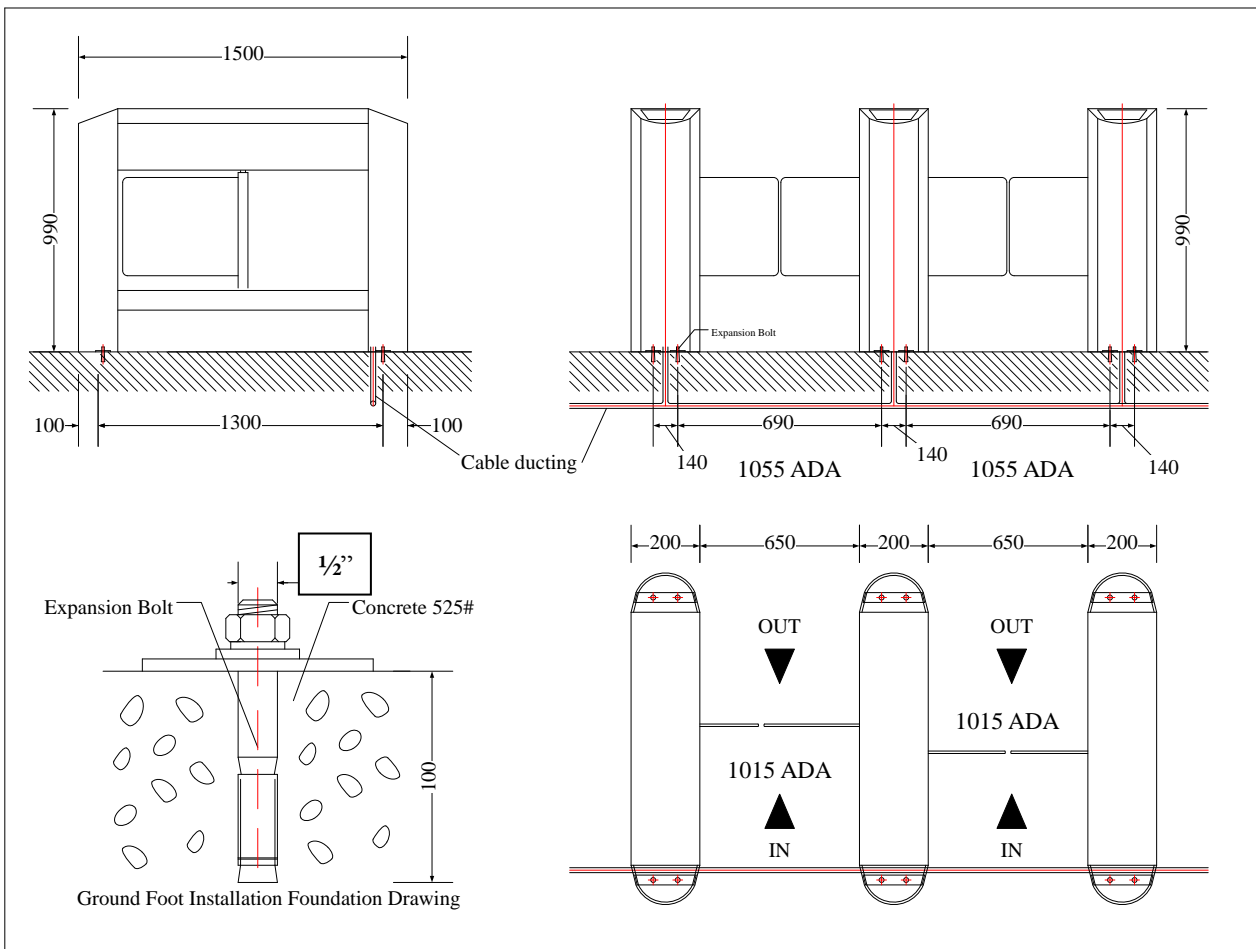
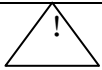


Figure 7

- 4) Sheath the strong/weak power cables into 3/4" PVC tubes respectively, and bury them with cement to the corresponding position;
- 5) Move each cabinet to the respective installation position, and align with each ground screw bolt;
- 6) Check the system composition and operation mode, and carry out the next operation after confirming the above check;

- 7) Open the cabinet door, select one of the products as a reference (it is better to select the middle one as reference). Align the hole for screw bolt at the chassis with the respective ground screw bolt. Then, tighten the nut preliminarily;
 - 8) Open an adjacent cabinet door. Align the hole for screw bolt at the chassis with the respective ground screw bolt and arrange properly on line with the reference product. Then, tighten the nut preliminarily. The rest products, if any, are installed just the same;
 - 9) Connect properly the power line and control line in accordance with the connection diagram for electric controller, and connect properly the protection ground wire of the system;
 - 10) After a certified check of status and function adjustment, fasten the ground screw nuts;
-



PRECAUTIONS:

- a) The depth of the PVC tubes buried shall be more than 60mm. The height above the ground shall be more than 50mm. And the exit of the PVC tube shall be bent return so as to avoid the water falls in.
 - b) All the operation above should be carried out under power off condition, and it should be ensured that the protection ground wire of the system is connected correctly, properly and firmly.
 - c) In case the equipment selected is used outdoor, a concrete installation platform of a size of 100mm~200mm should be prepared for humidity-proof at the location for installation of the equipment. At the same time, rainproof facility such as sun shading plate should be installed above the equipment. It is forbidden to use the equipment directly at an exposed environment.
-

6.2 Product Status Check

After the product is properly installed, it is required to carry out firstly status check, the steps are given below:

- 1) Check for a correct terminal connection between various electric controlling components
- 2) Check the original state of the system after power on.
 - Counter is displaying number;
 - Check if the marks indicated in the direction indicator are the same as those of the system setting;
 - Check if the system operation mode is the same as that selected by the user (normally open mode, barrier open, and normally close mode, barrier close);
 - If the above status is abnormal, please refer to the section of “Common failures and remedies”;
- 3) Check infrared sensor for each passage
Check firstly the infrared sensor prior to putting the product into normal operation;
The checking method is given below:

- Check one by one, i.e. check and see if the corresponding indicator is lit on the main control board after shielding one by one each pair of infrared sensors;
 - Check pair by pair, i.e. check and see if the corresponding indicator is lit on the main control board after shielding the two transmission and reception pairs of infrared sensors at the upper side of the product at the same time in turn;
 - If the corresponding indicator is not lit, eliminate the failure by referring to the section of “Common failures and remedies”;
- 4) Check the movement status of the main and sub-barriers of each passage.
- a) Remove the connection line between the driving board and the main control board, and adjust the driving board for each passage;
 - b) Press the push button for opening barrier to adjust the barrier movement:
 - Check if the barrier open action is stable;
 - Check if the barrier movement is to the position;
 - Check if it is proper for the motor over current protection;
 - c) Connect the connection line between the driving board and the main control board, and adjust the barrier movement of the system;
 - d) Send an open barrier signal, and check the movements of the two barriers of the passage are in synchronization;

【Notes】

- 1) The product had gone through inspection and adjustment of various technical specifications before delivery from the factory. However, to ensure a safe and reliable operation of the system, it is necessary to carry out status check for the system after the product has been installed properly in the site.
- 2) The above operation should be carried out by the certified personnel, who have gone through strict training. It is not allowed to modify at will the setting parameters of the system without approval.

6.3 Product Functional Adjustment

After finishing the product status check, it is necessary to carry out various functional check of the product immediately. The detail test contents are given below:

Connect the communications line of the main control board and carry out the adjustment of the system;

6.3.1 The personnel for adjustment and test should carry out the setting of product functional parameters required by the user. For detail, refer to “parameter setting of main control board”;

- 1) Selection of operation mode: normally open and normally close modes;
 - 2) Selection of passing methods for swing barrier;
 - 3) Setting passing method, the card reading at the controlled direction with/without memory;
- Notes: normally close mode is adopted for swing barrier operation mode as far as possible.

6.3.2 Adjustment of in/out way passing method

1) Single way passing:

Single way passing for a passage means that there is passenger passing in one way and no passenger passing in the other, or barring in the other.

- During adjustment, if the person carrying out the adjustment only reads effective card at the in (out) way card reader, the red barring mark at the in (out) way “⊙” will change into green “↻”. At the normally open mode, the barrier will not act (for normally close mode, barrier open), allowing the passenger to enter into passage for passing at the in (out) way;
- When the person carrying out the adjustment walks to the middle of the passage, the passing mark will change into red barring mark “⊙” And if the person goes on reading card, the passing mark will change into green “↻” allowing the next person to pass;
- When the person carrying out the adjustment walks out of the passage, the indication number of the counter at the in (out) way will increase 1 automatically;
- If the person carrying out the adjustment does not pass after reading the card, the system will wait for N seconds (the time being adjustable by the user, the default being 10s). If there is no passenger passing through, the system will cancel the passing and the mark changes into red “⊙” It is required to read the card again, if it is necessary to pass through;

Fig.8 and Fig.9 are respectively representing the single way passing action process for normally open and normally close modes.

A. Single way passing at normally open mode:

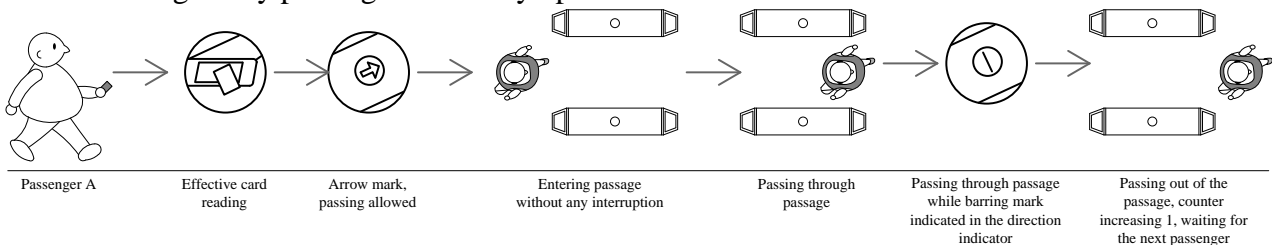


Fig.8

B. Single way passing at normally close mode:

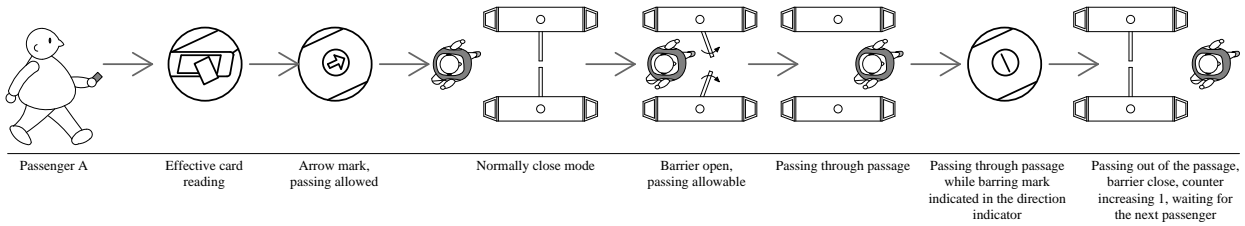


Fig.9

2) Double way passing:

Double way passing to a passage is that the both sides of passage are with passengers passing in turn through the passage by reading card;

- During adjustment, the person carrying out the adjustment should read card at the in /out way card reading devices at the same time. In this case, the red barring mark at the both ways will change from red “⊗” barring mark into green passing mark “↻”. It allows the passengers at both sides to pass through the passage in turn;
- If passengers are passing through firstly the passage at a passing direction, the direction indication at the other passing way will change the green “↻” passing mark into red “⊗” barring mark. After the passenger firstly entered the passage has passed through the passage, the direction indication of the other passing direction will change into “↻” passing mark, allowing next passenger to pass through;
- When the passenger walks out of the passage, the indication number of the counter at the passing direction will increase 1 automatically;
- If the person carrying out the adjustment does not pass after reading the card at the specified time of the system, the system will cancel the passing and return back to the initial mode. It is required to read the card again if the passenger wants to pass through.

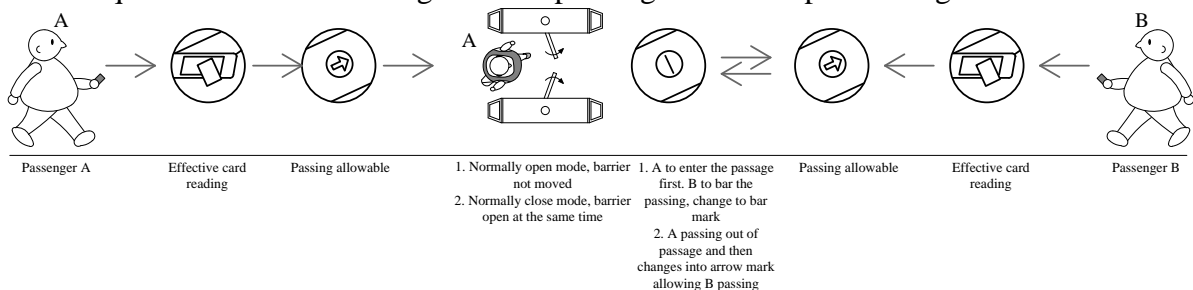


Fig.10

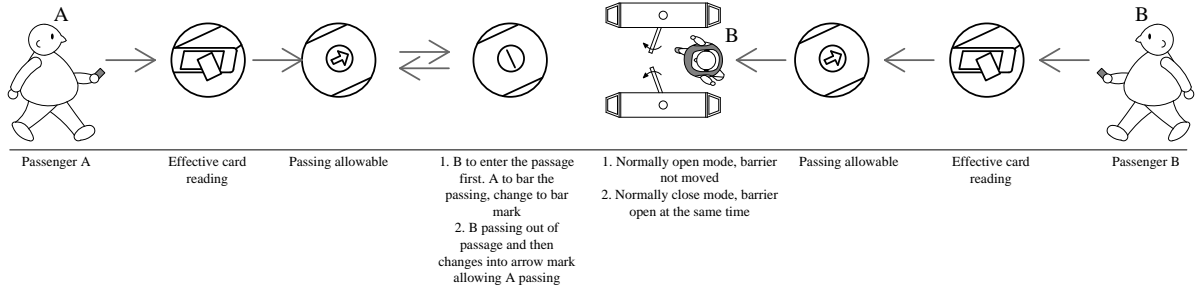


Fig.11

3) Simultaneous passing

For a passage, simultaneous passing means that there are passengers passing through both sides of the passage by reading card, and the passengers entering the passage simultaneously;

- If the persons carrying out the adjustment simultaneous passing through the passage after reading cards at in/out ways, the system will deliver sound/light signal. The system will not release the alarm until passengers at either side retreat from the passage. The passengers at both ways may pass in turn in accordance with the passing mode for both ways;

- The process is as given in Fig.12

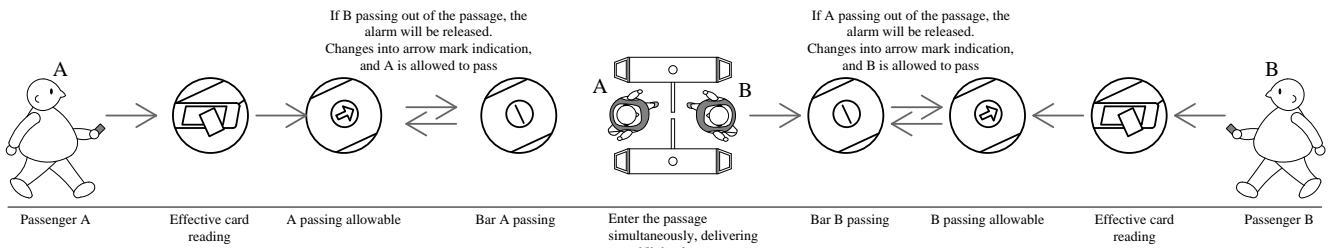


Fig.12

4) Free passing: for a passage, the passengers may pass through following the indication mark of the direction indicator without reading card. The process is as given in Fig.13.

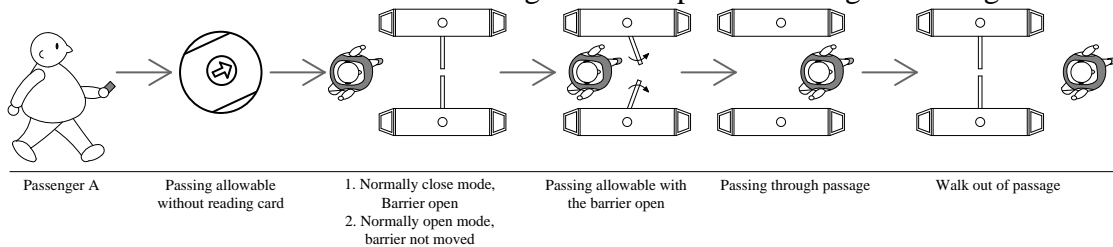


Fig.13

5) Passing bar: for a passage, it is not allowed for any passenger to pass through the passage. The process is as given in Fig.14

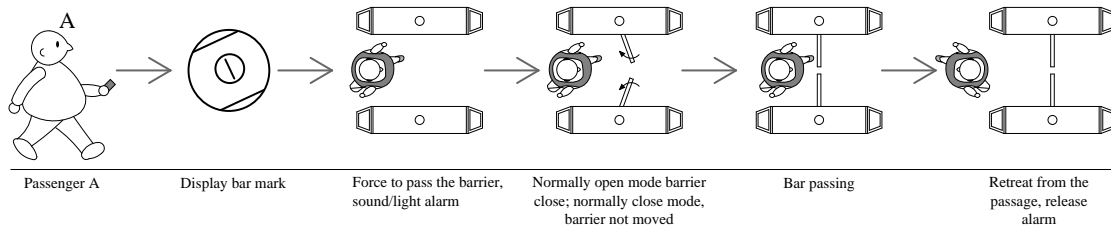


Fig.14

6) Multiple card reading and multiple passing

- To adjust the function, the person carrying out the adjustment should firstly set up the system into reading card with memory (double way or single way with memory). After the setting, the person carrying out the adjustment reads the card for N time at the side reading card with memory, and the system will allow N man/time passing. During the adjustment, if the man/time exceeds the card reading times, the system will close the barrier at the normally open mode (for normally close mode, no action for barrier) and deliver sound/light alarm, until the passenger retreats. The counting way of counter is that every time there is a passenger passing through the passage completely, the indication number of the counter at the entrance of passage will increase 1 automatically;
- In case the person carrying out the adjustment reads the card for N time, and there will be no more passengers passing through before N man/time is completed, the system will wait for N seconds. If there are no more passengers passing through when N second is past, the system will cancel the remnant man/time. Card reading is needed again if it is required to pass through;

6.3.3 Alarm Function

- 1) In case the person carrying out the adjustment does not read card but enters the controlled or barred passage, the barrier will carry out barrier closing action when the system is at the normally open mode, and sound/light alarm will be delivered. The alarm will not be released, the barrier will not be opened and the system will not recover to the present operation mode, until the passenger retreats from the passage. The barrier will not carry out any action but only deliver sound/light alarm. The alarm will not be released until the passenger retreats from the passage;
- 2) When there are passengers simultaneously passing through the passage at both ways, the system will close the barrier and deliver sound/light alarm. The alarm will not be released and recovered to the original operation mode until the passenger retreats from the passage;

6.3.4 Voice Function

After valid card reading, the system will deliver a warm voice to the passenger automatically. Similarly, when the passenger forgets to read card and enters the passage, the system will also deliver warming indication for the passenger;

6.3.5. Power off Open Barrier Function

During adjustment, the system is at normal operation mode. In this case, cut off the power and 3-5 seconds later, the system should start the spare power and the barrier will withdraw at the normally close mode (at normally open mode, no action for the barrier). The spare power will be cut off automatically 5-8 seconds later.

6.3.6. Safety Protection Function

When the person carrying out the adjustment shields the infrared sensor at the middle of passage during the product is closing the barrier, the barrier will stop the closing action immediately and will deliver sound/light alarm.

6.3.7. Control Function of Emergent Barrier Open

In a particular site or emergent situation, the barrier will be opened automatically when the management person presses only the emergency push button;

7. Description of Product Operation

- 1) The product should be adjusted for the functions prior to application and can only be used after a normal adjustment;
- 2) It is forbidden to stand on the passage when the product is powered on;
- 3) It is forbidden for the card reading passenger to enter the passage before the indicator turns to green;
- 4) It is not allowed for the passenger entering the passage to stay in the passage;
- 5) It is not allowed for the passenger entering the passage to be crowded in the passage, and a certain separation should be kept between the passengers;
- 6) It is forbidden to pass through the passage in a high speed;
- 7) It is forbidden to strike or rock the product and the product should be managed properly when it is not in operation;
- 8) It is forbidden to push or pull with force or impact the barrier when the product is at the close mode;

Warnings:

- a) Please do not use the system when there is lightning, otherwise, the system may be damaged;

- b) To avoid personnel injury, the system protection grounding should be reliably connected to the ground;

8. Product Maintenance

- 1) It is Prohibited for those non-specialists to open the cabinet to carry out adjustment, maintenance and service of the product;
- 2) The housing of the equipment is of a sub-polish stainless steel. It is required to clean regularly with soft cloth so as to keep a clean and polish surface. It is forbidden to clean the surface with a hard object; otherwise, the good looking appearance may be affected. It is also forbidden to wash it with water, otherwise, short circuit may occur in the electric control system and the equipment may be damaged;
- 3) It is required to check regularly the connection of various movement sections of the equipment to avoid loosen fasteners, otherwise, turnstile failure may be resulted due to long term operation;
- 4) It is required to apply lubricant regularly to the movement sections;
- 5) It is required to check regularly the connection socket and connectors of the lines to ensure a reliable connection;
- 6) It is required to check regularly the protection grounding of the system to ensure a reliable connection;
- 7) It is required to recover the protection housing of the circuit and close properly the cabinet door after checking and maintaining properly the product;

Appendix A

A.1 Software manual

Login: (after Purchase please contact Turnstile Security systems directly for software codes)

System setting

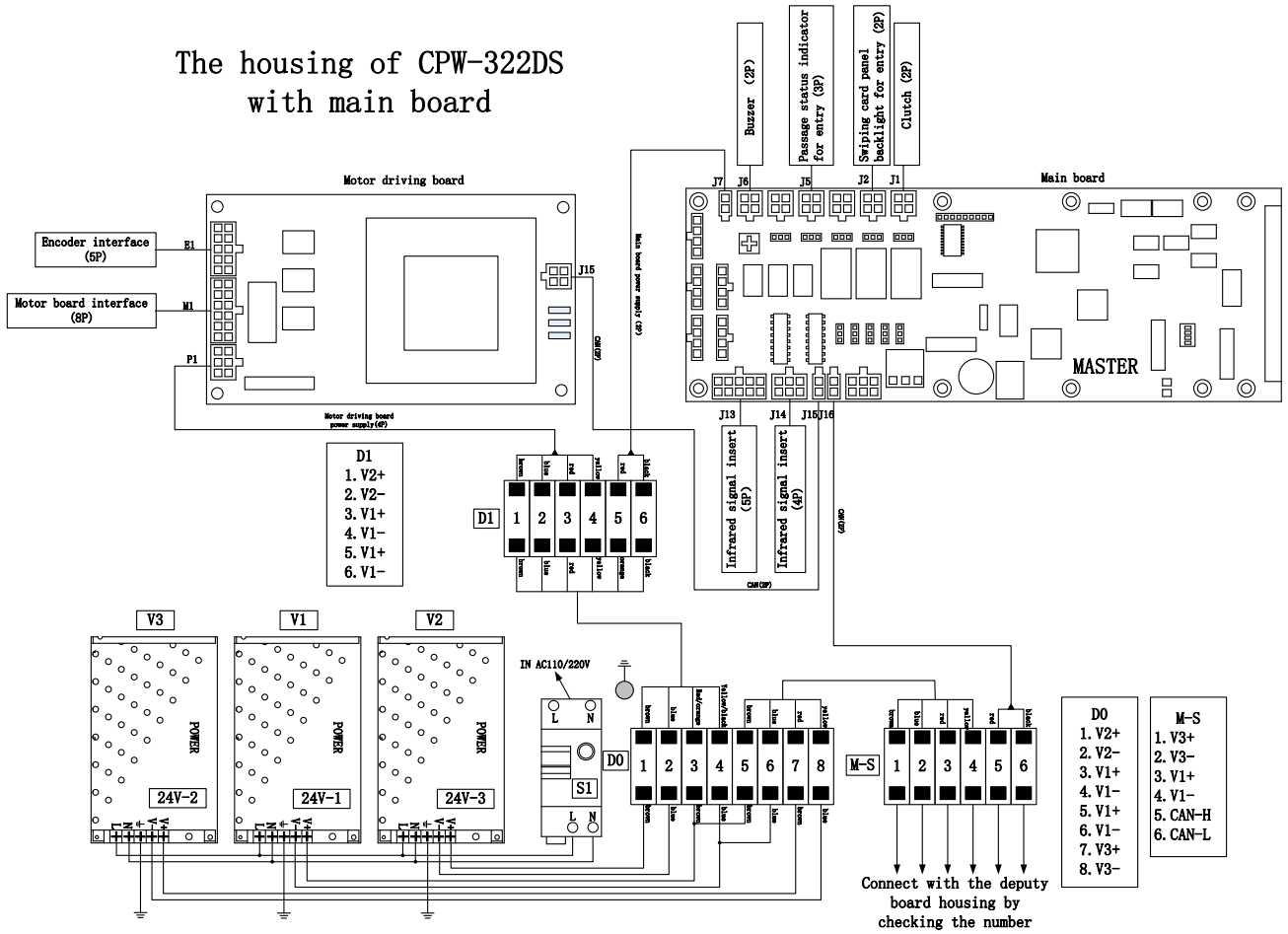
Control information

- 1) Working mode setting (for optical turnstile):
 - NO mode: normal open, gate stay in open state, if passenger sign-in/sign0out successfully; gate will be closed and sound alarm if passengers get into the gate area without sign-in/sign-out.
 - NC mode: normal close, gate stay in close state, gate will open if passenger sign-in/sign-out successfully; gate will return to close state after passenger pass through or timeout.
- 2) Motor speed options: to adjust the speed of operation of the optical turnstile motor.
- 3) Status options: to set up operation mode for passage entry and exit.
 - Entry/exit controlled: entry/exit direction controlled by push button and access controller, passenger pass through with sign-in/sign-out or press push button.
 - Entry/exit prohibited: entry/exit way barring.
 - Entry/exit free: gate in free mode, let passenger pass through freely without sign-in/sign-out.
- 4) Door closing time: setting the max time for each passenger entering the passage. The value effective range is 1-60, unit is second. Default: 5
- 5) Auto-raise: automatic function of rod up.
- 6) Auto-up: automatic function of rod down.
- 7) Entry counter reset: clear entry counting value.
- 8) Exit counter reset: clear exit counting value.
- 9) Save: confirm and save setting.

A.2 Relative remarks

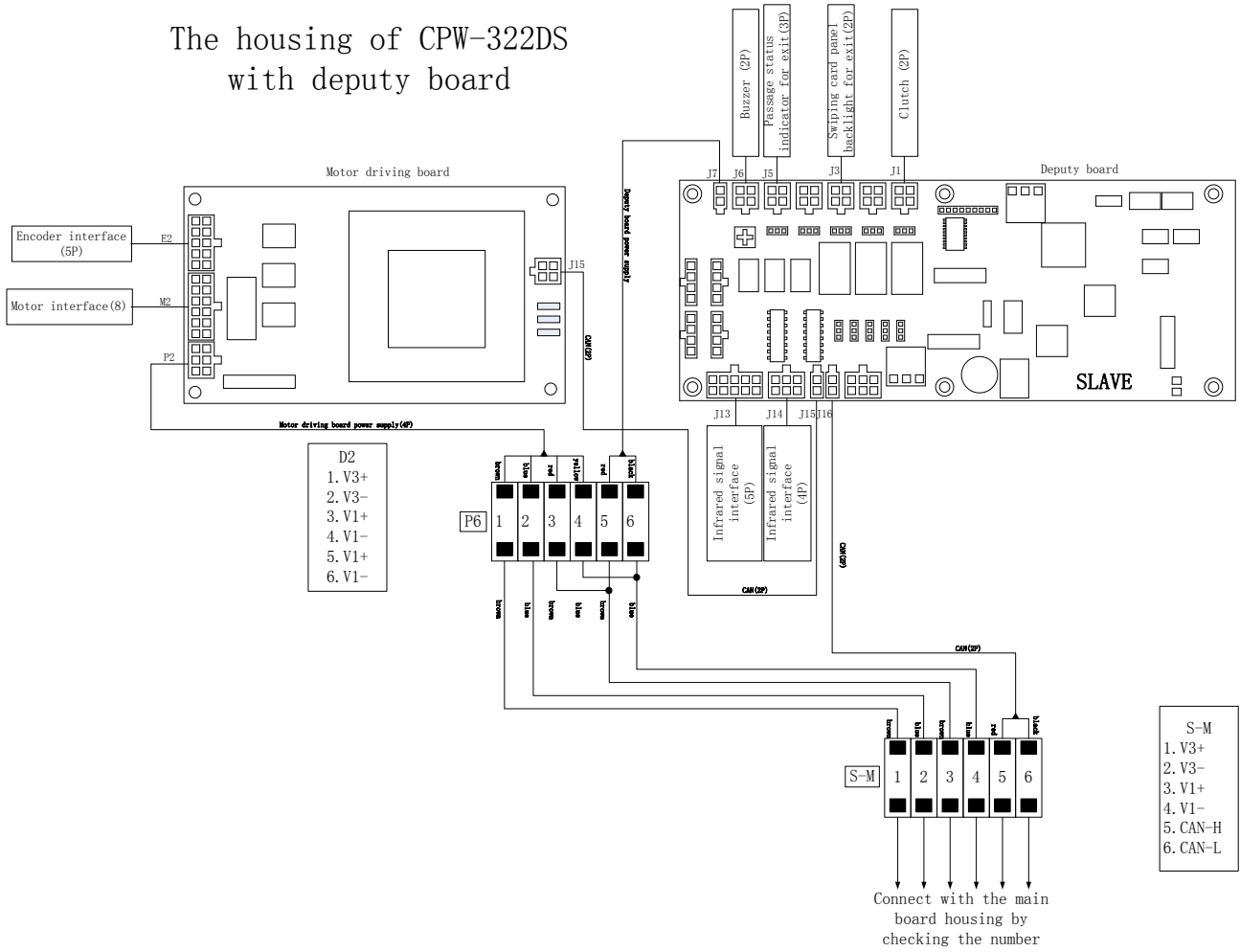
Connection diagram shown as the Attached Figure 3(a) and Attached Figure 3(b)

The housing of CPW-322DS
with main board



Attached Figure 3(a)

The housing of CPW-322DS
with deputy board



Attached Figure 3(a)

Appendix C T.S.S. Turnstile Control Board Communication Protocol Specifications

1. Communication between control board & PC

Could choose RS232, RS485 OR UDP interface to Communicate between control board & PC

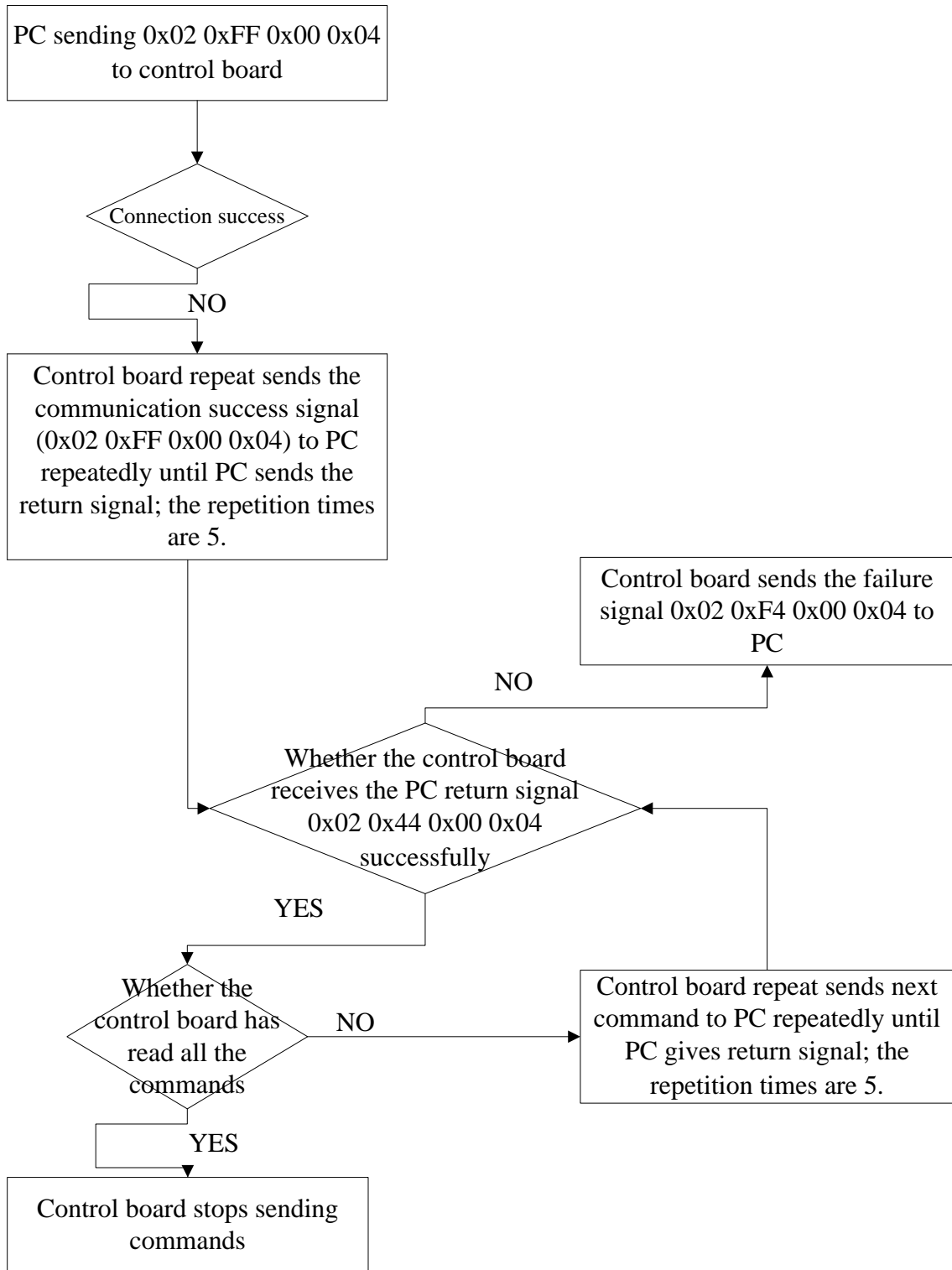
1.1 Initialization & reading control board parameters

PC send communication demand [address(if you choose UDP interface, no need address)+ 0x02 0xFF 0x00 0x04] to control board. Control board receive communication demand and send feedback signal [address(if you choose UDP interface, no need address)+ 0x02 0xFF 0x00 0x04] to PC, until PC send feedback signal [address(if you choose UDP interface, no need address)+ 0x02 0xFF 0x00 0x04] or overtime (waiting time is 2 seconds). The control board of turnstiles will send related parameters after received feedback signal. Every parameter sent by main board needs the feedback signal [address(if you choose UDP interface, no need address)+ 0x02 0xFF 0x00 0x04] from PC, then send the next parameter. Or overtime (waiting time is 2 seconds).

Sending parameters as follows:

- 1) Equipment Model Number
- 2) Software Version Number
- 3) Equipment ID Number
- 4) Turnstile Working Mode
- 5) Working Mode of Entry & Exit
- 6) Door Closing Delay
- 7) Door Opening & Closing Speed (inapplicable to tripod turnstiles)
- 8) Entry Counting
- 9) Exit Counting
- 10) IR Sensors' Sensitivity (inapplicable to tripod turnstiles)

For detailed corresponding command formats, please refer to 2. Control Board Sending Command.
Below is the flow Chart:



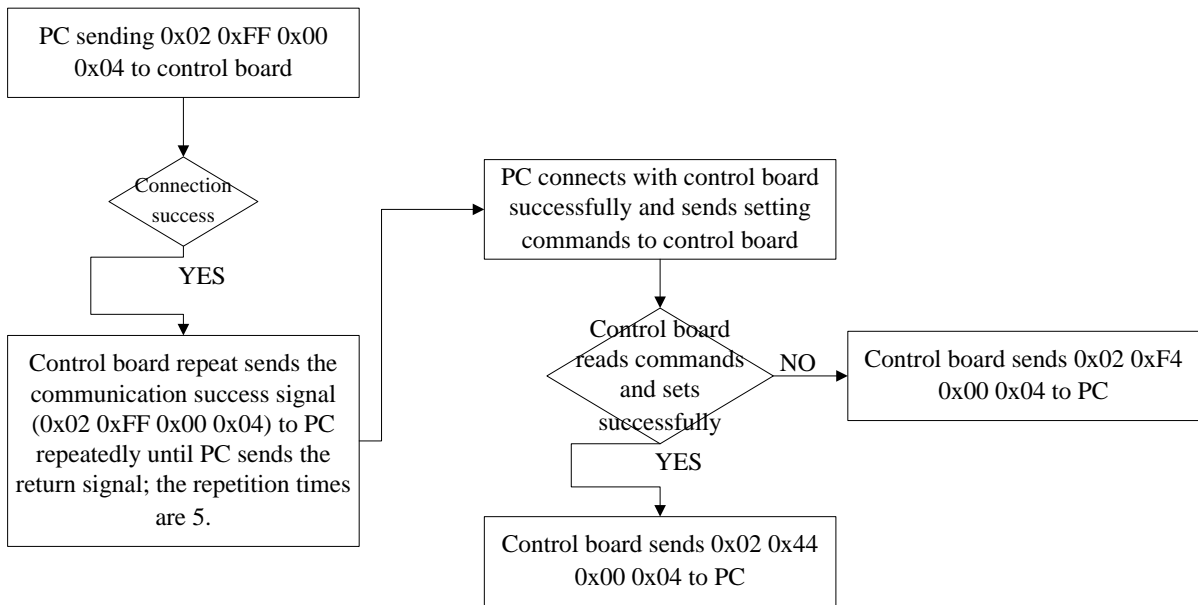
1.2 Setting control board parameters via PC

After PC connects with control board successfully, corresponding commands can be sent to the control board to set the parameters. The control board will send success return signal (0x02 0x44 0x00 0x04) to PC if the setting is successful, or the control board will send failure return signal (0x02 0xF4 0x00 0x04).

The control board is now available for PC to set the following parameters:

- 1) Turnstile Working Mode
- 2) Working Mode of Entry & Exit
- 3) Door Closing Delay
- 4) Door Opening & Closing Speed (inapplicable to tripod turnstiles)
- 5) Entry & Exit Counter Reset
- 6) Entry & Exit Counter Switch
- 7) IR Sensors' Sensitivity (inapplicable to tripod turnstiles)
- 8) Auto-Drop & Raise (only applicable to fully automatic tripod turnstiles)

For detailed command formats, please refer to 3. Control Board Receiving Command. Below is the flow Chart:



2. Control Board Sending Command

Control Board Sending Command Format

Command Start Symbol	Command Type	Command Length	Command Content	Command End Symbol	Command Descriptions
	0xFF	0x00	NULL		Connection success return signal
	0x44	0x00	NULL		Receiving command success return signal
	0xF4	0x00	NULL		Receiving command failure return signal
	0xF1	Command Content	Equipment Model ASCII Code		Equipment model name
	0xF2	Length (unit:	Software Version ASCII Code		Software Version Number

0x02	0xF8	word)	Equipment ID ASCII Code			0x04	Equipment ID Number
	0x21		Entry Counting ASCII Code				Entry Counting
	0x22		Exit Counting ASCII Code				Exit Counting
	0x24		Equipment Type ASCII Code				Exit Counting
	0x41	0x01	0x30-0x33				Corresponding working mode to command content: 0x30: NO Mode 0x31: NC Mode 0x32 : Entry Open (Test Mode); 0x33 : Exit Open (Test Mode);
	0x14	0x02	0x30-0x33	0x30-0x33			Working mode of entry & exit, the first word shows entry status, the second word shows exit status. 0x30: Controlled Mode; 0x31: Free Passing Mode; 0x32: Forbidden Passing; 0x33: Barrier-free passing after swiping card
	0x18	0x03	0x30-0x39	0x30-0x39	0x30-0x39		Door closing delay time (0-999 seconds) The first word: the ASCII code for the hundred digit of delay time; The second word: the ASCII code for the tens digit of delay time; The third word: the ASCII code for the units digit of delay time;
	0x42	0x01	0x31-0x37				ASCII code of the door opening & closing speed ranking (1-7) (inapplicable to tripod turnstiles)
0x81	0x01	0x31-0x35			ASCII code of the IR sensors' sensitivity ranking (1-5) (inapplicable to tripod turnstiles)		

3. Control Board Receiving Command

Control Board receiving Command Format

Command Start Symbol	Command Type	Command Length	Command Content			Command End Symbol	Command Descriptions
0x02	0xFF	0x00	NULL			0x04	Connecting control board request
	0x44	0x00	NULL				Reading command success return signal
	0x41	0x01	0x30-0x33				Setting equipment working mode: 0x30: NO Mode; 0x31: NC Mode; 0x32 : Entry Open (Test Mode); 0x33: Exit Open (Test Mode);
	0x14	0x02	0x30-0x33	0x30-0x33			Setting working mode of entry & exit, the first word shows setting entry working mode, the second word shows setting exit working mode. 0x30: Controlled Mode; 0x31: Free Passing Mode; 0x32: Forbidden Passing; 0x33 : Barrier-free passing after swiping card
	0x18	0x03	0x30-0x39	0x30-0x39	0x30-0x39		Setting door closing delay time (0-60 seconds) The first word: the ASCII code for the hundred digit of delay time; The second word: the ASCII code for the tens digit of delay time; The third word: the ASCII code for the units digit of delay time;
	0x21	0x01	0x30-0x33				Entry & exit counter switch setting: 0x30: entry counter on; 0x31: entry counter off; 0x32: exit counter on;; 0x33: exit counter off;

	0x22	0x01	0x30-0x31		Counter Reset: 0x30: entry counter reset; 0x31: exit counter reset;
	0x24	0x01	0x30-0x31		Setting tripod turnstile auto-drop & raise (only applicable to fully automatic tripod turnstiles): 0x30: auto-drop; 0x31: auto-raise
	0x28	0x01	0x30-0x31		Reading entry & exit counting: 0x30: reading entry counting; 0x31: reading exit counting; After receiving the command, the control board will send the corresponding counting (see the sending command format table)
	0x42	0x01	0x31-0x37		Setting the door opening & closing speed ranking (1-7) 0x31-0x37: ASCII code of 1-7 (inapplicable to tripod turnstiles)
	0x81	0x01	0x31-0x35		Setting the IR sensors' sensitivity ranking (1-5) 0x31-0x35: ASCII code of 1-5 (inapplicable to tripod turnstiles)
	0x82	0x02	0x31-0x32	0x31-0x35	Control LED panel, after receiving this command, control panel will control LED panel to display, and then return to the feedback command. The first word refers to LED panel address: 0x31: LED panel 1 0x32: LED panel 2 The second word refers to the image which LED panel displays: 0x31: prohibition 0x32: pass by upper left arrow

						<p>0x33: pass by bottom left arrow</p> <p>0x34: pass by upper right arrow</p> <p>0x35: pass by bottom right arrow</p>
	0x84	0x02	0x31-0x32	0x31-0x35		<p>Set the default display image of LED panel on both sides. After receiving this command, the control panel will set the display image of LED panel on both sides according to the command contents, and then return to the feedback command.</p> <p>The first word refers to LED panel address:</p> <p>0x31: LED panel 1</p> <p>0x32: LED panel 2</p> <p>The second word refers to image which LED panel displays:</p> <p>0x31: prohibition</p> <p>0x32: pass by upper left arrow</p> <p>0x33: pass by bottom left arrow</p> <p>0x34: pass by upper right arrow</p> <p>0x35: pass by bottom right arrow</p>