
一、Warn

1.1 Safety Warning

Important! --- This manual contains important information related to safety. Improper installation may lead to serious safety accidents. Please read all the contents of this manual before starting to install all parts. If you have any questions, please temporarily stop the installation and contact the company's technical service.

Important! ---This manual contains important instructions. Please keep this manual for future reference during maintenance.

1.2 Safety Warning

1. Attention! Please read the instructions before use and operate strictly according to the instructions;
2. Since packaging materials are a potential source of danger, they must be kept out of the reach of children;
3. Keep the instructions for future use;
4. This product is designed and manufactured strictly in accordance with the instructions in the text file. Any use and operation not in accordance with the instructions may cause product damage or danger;
5. The Company is not responsible for any adverse consequences arising from inappropriate use or use beyond the prescribed scope;
6. Do not install this product in areas with explosion hazards. Combustible gases are serious safety hazards.
7. Mechanical parts must comply with relevant national standards;
8. The supporting products must be designed and manufactured in accordance with the requirements of the instructions;
9. The company will not be responsible for any problems caused by ignoring the process requirements of precision components or causing these components to deform during construction;
10. The installation must comply with relevant national standards;
11. Before repairing the product, the power supply should be cut off;
12. Check whether the grounding is correct;
13. Safety devices (such as magnetic switches, sensors, etc.) should be protected from damage;
14. The company is not responsible for any safety issues or malfunctions of the supporting products not provided by the company.
15. Only the original parts are repaired;
16. Do not make any changes to the components of this system;
17. The installer must explain to the user in detail the operation methods and relevant regulations under emergency conditions, and provide the user with instructions;
18. Children and other irrelevant persons are strictly prohibited from approaching when installing the product;
19. Keep the remote control out of the reach of children to prevent accidents;

20. Anything not expressly specified in the manual is not allowed.

1.3 Usage Warning

This product is not suitable for use by children, disabled people, or people without common sense and experience, unless there is a guardian present or someone trained and responsible for their safety.

Children, the elderly and pregnant women must be supervised when they pass through to prevent them from touching and causing accidental injuries.

Prevent children from touching the motor and control equipment. Please keep the remote control out of children's reach.

二、About the product

2.1 Application

The HX-X1 channel gate controller is an upgraded product developed based on the original channel gate control board. It makes the controller's control over the motor more precise and further improves various electrical performance indicators.

The HX-X1 controller is used for single swing or double opening control of swing gates and wing gates, and can automatically control the opening and closing through access control devices, face recognition devices, mobile phone remote control and other devices.

三、Main functions and performance description

3.1 Features

- 1: It has fault self-detection and alarm prompt functions, which is convenient for users to maintain and use ;
- 2: It can be connected to any control device output control signal or button or remote control to achieve unidirectional and bidirectional control passage ;
- 3: Automatic reset function: The swing gate will automatically reset after every 90 ° swing or corresponding angle rotation of the wing gate and detecting the passage of people and objects. If no one passes within the specified time (delay is adjustable in multiple gears), the system will automatically cancel the permission for this passage and return to the initial position .
- 4: Light indication: High-brightness traffic light status indication, guiding traffic ;
5. Fire input: can be connected with the fire alarm signal to achieve uninterrupted power

supply and normally open pole drop ;

6: Alarm prompt function: when illegal passage or gate rush occurs, the alarm will be automatically issued ;

7: Adjustable speed: The speed of opening and closing of the swing arm /wing plate (blocking part) is adjustable in multiple levels, and users can set it according to actual needs ;

8: New generation of industrial-grade ARM control system, with added multi-functional digital setting, encryption and reset functions ;

9: Anti-reverse function: During the process of resetting the swing arm /wing plate (blocking part) , if an external force reverses the blocking part , the blocking part will automatically start reverse thrust and issue an alarm. After the external force disappears, it will automatically return to zero position and resume traffic ;

10: Automatic protection function: When external force prevents the swing arm /wing plate (blocking part) from moving normally, and the external force is continuous, the system will automatically detect and automatically protect itself and enter sleep mode after 20 seconds. When the next legal signal is input, the gate will automatically return to normal ;

11: Multi-level anti-collision buffer function: When illegal passage or gate rush occurs, the blocking part buffers the corresponding angle and starts the immediate reverse thrust, while activating the alarm, which not only realizes humanized injury prevention but also greatly reduces the mechanical damage caused by frequent or continuous collisions ;

12: Power on to close the gate and power off to open the gate : the swing arm /wing plate (blocking part) will automatically open when the power is off, and automatically reset when the power is on (blocking the passage).

3.2 Main performance description

1. It has 3 times overload capacity and supports slow start and slow stop function;
2. The motor does not have thermal protection problems and can achieve multi-level speed regulation;

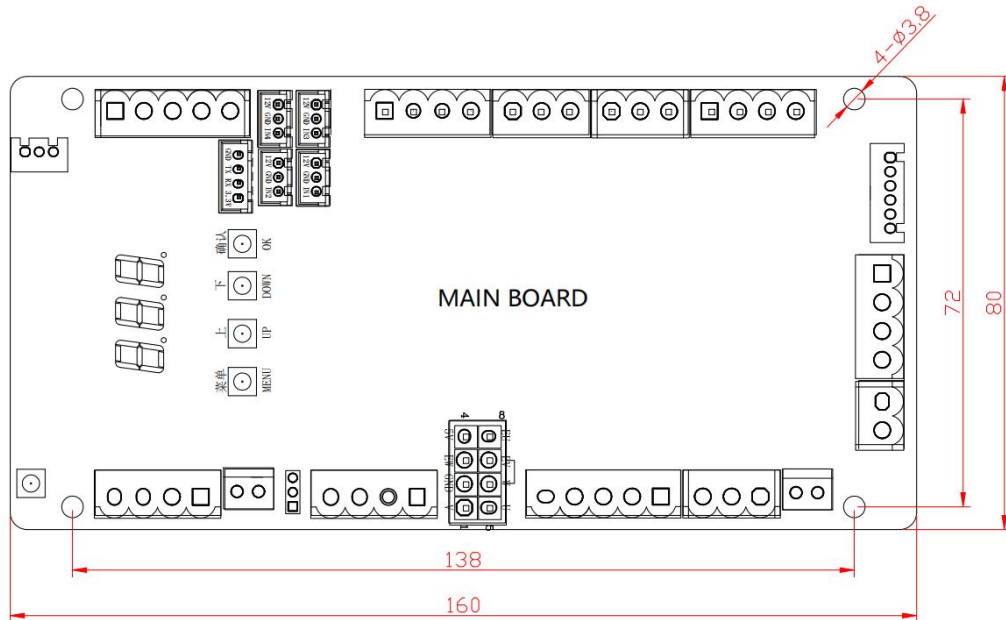
3.3 Main Features

- 1.3 times overload capacity and slow start and slow stop function.
2. WeChat applet realizes remote control, fault reporting, servo control algorithm application, and door opening time setting.
3. No motor thermal protection issues.
4. With multi-level speed regulation function.

四、Installation Instructions

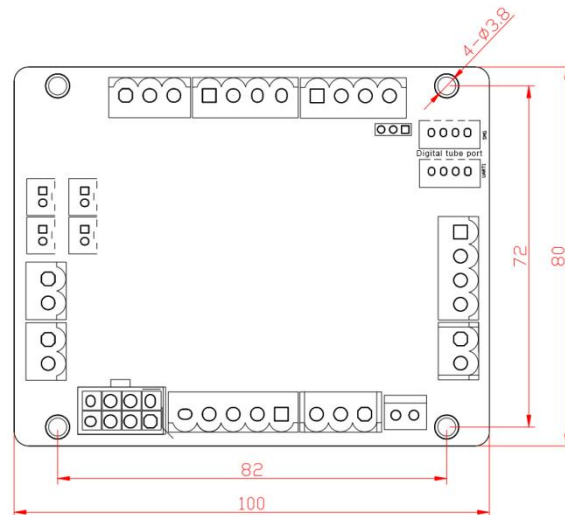
The control driver is installed according to the positioning holes of the control board. It is divided into the main board and the slave board, which are described as follows:

4.1 Motherboard installation diagram



Mainboard installation dimensions

4.2 Installation diagram from board

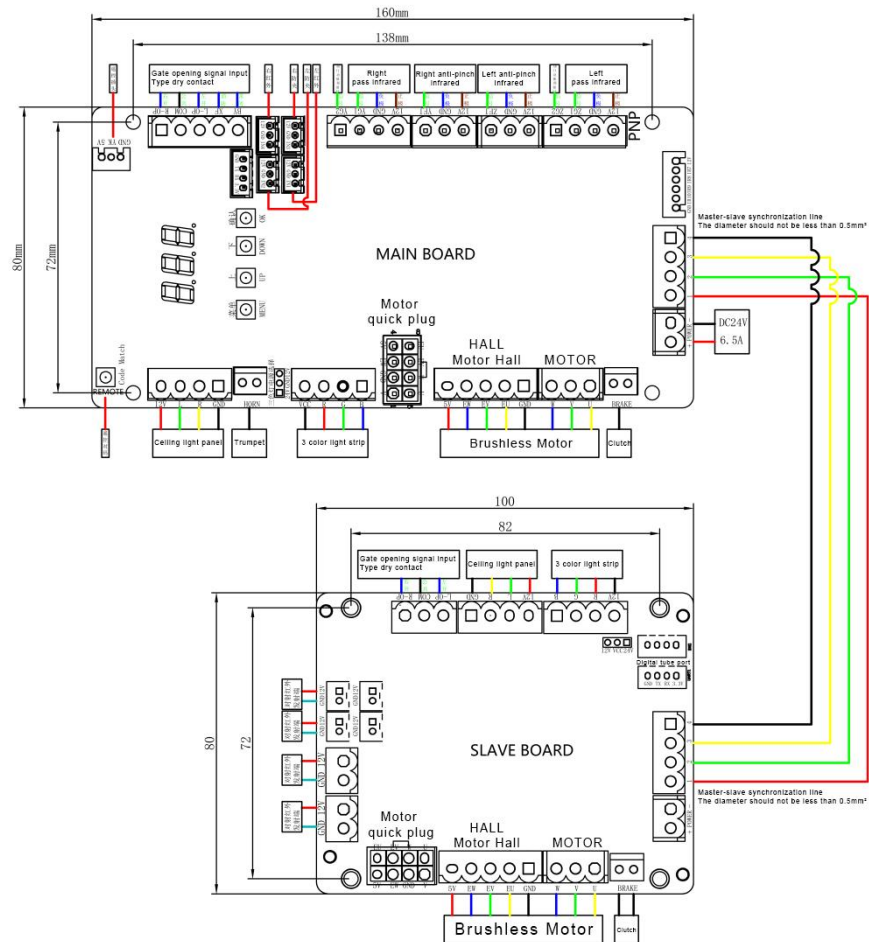


Dimensional drawing for mounting from board

Note: 4-Φ3.8 is the installation hole

五、Power on and motherboard description

5.1 Master and slave wiring instructions

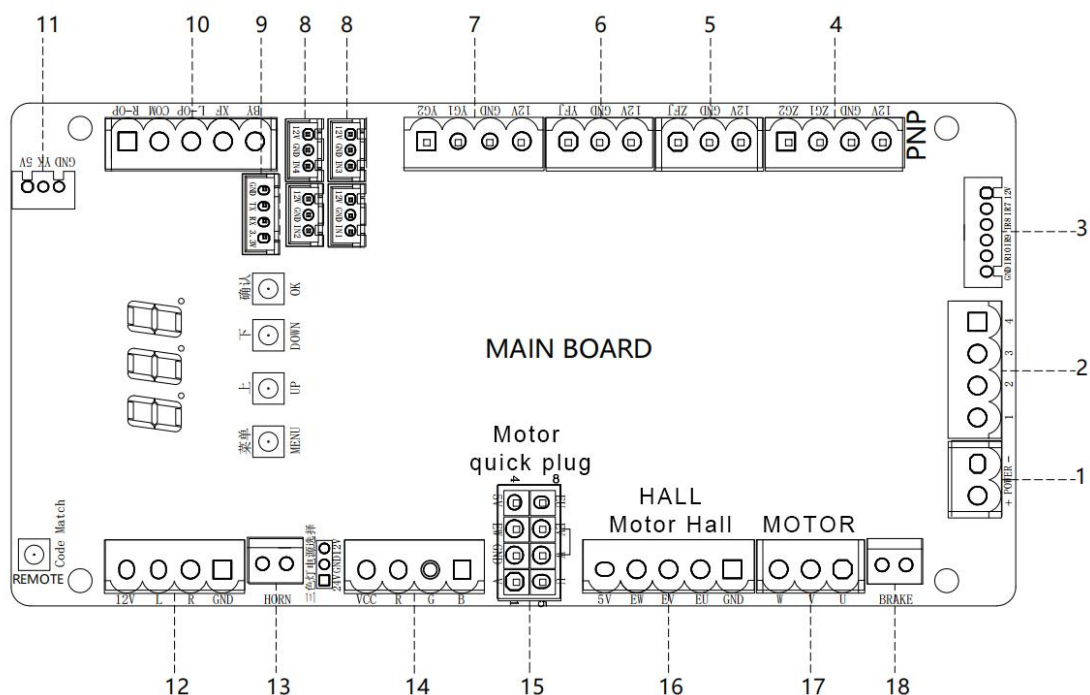


Master and slave wiring diagram

1. First, connect the external devices according to the definition of the wiring terminals in the figure;
2. After connecting external devices, check and confirm that the wiring is correct, then turn on the power;
3. Follow the instructions in 5.3.

5.2 Master and slave board terminal definition

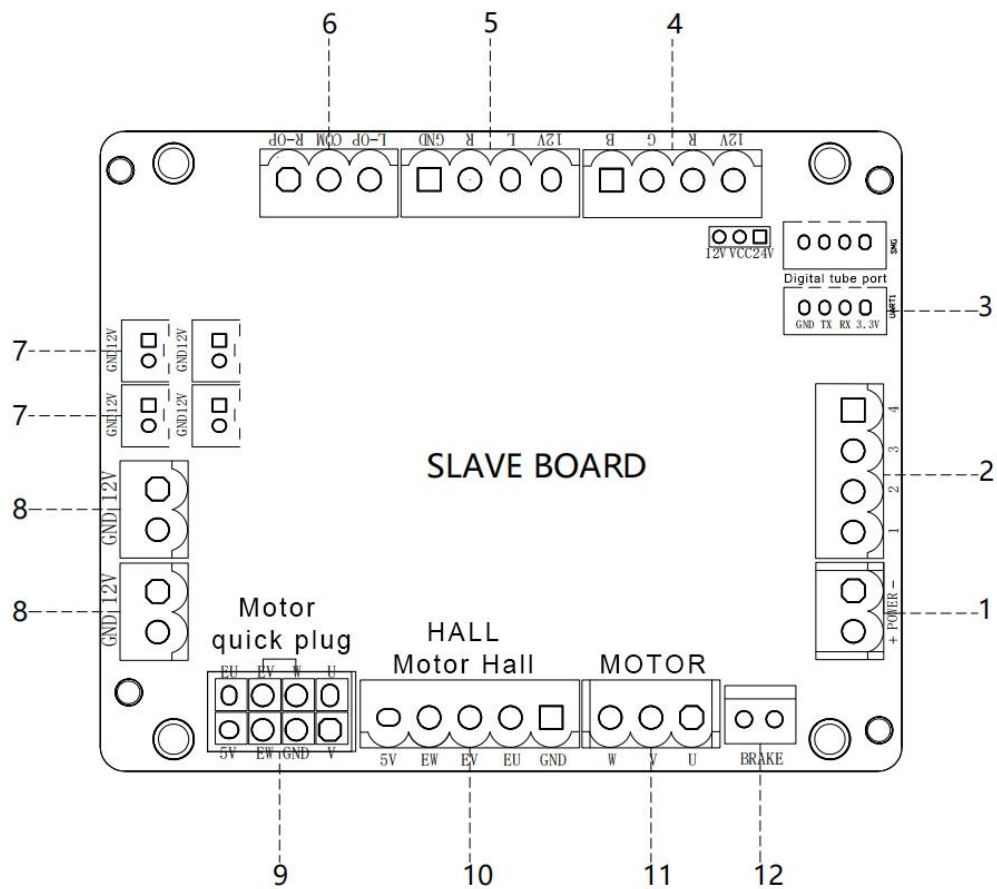
5.2.1 Mainboard terminal definition



Interface Description

Interface number	Interface Description	Remark
1	Power interface	
2	Communicate with slave devices	
3	7-10 Infrared interface	
4	Left pass infrared	
5	Left anti-pinch infrared	
6	Right anti-pinch infrared	
7	Right pass infrared	
8	1-4 infrared interface, 1-left infrared, 2-left anti-pinch, 3-right anti-pinch, 4-right infrared	
9	LCD display RS232 communication interface	
10	Opening signal input, dry contact ◆BY-Access control door opening signal ◆XF-Fire Fighting ◆L-OP left opening ◆Open the public terminal ◆R-OP right opening	
11	Remote control signal	
12	Traffic lights	
13	trumpet	
14	Three-color light	
15	Motor quick plug	
16	Motor Hall	
17	Motor control line	
18	clutch	

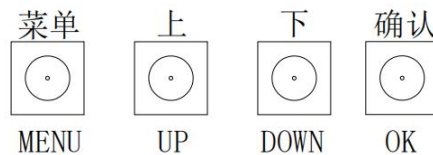
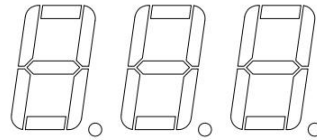
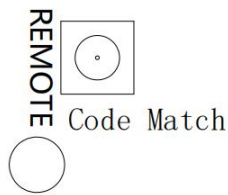
5.2.2 Definition from board terminals



Interface Description

Interface number	Interface Description	Remark
1	Power interface	
2	Communicate with the host	
3	LCD display RS232 communication interface	
4	Three-color light	
5	Traffic lights	
6	Opening signal input, dry contact ◆L-OP left opening ◆Open the public terminal ◆R-OP right opening	
7	Infrared transmitter 12V power supply	
8	Infrared transmitter 12V power supply	
9	Motor quick plug	
10	Motor Hall	
11	Motor control line	
12	clutch	

5.3 Controller Operating Instructions



" **Up** ": This button can be used to open the door in normal working state. After entering the setting state, this button adds menu items and adjusts the set value upward. In the parameter setting interface, short press each time to add one. Long press to continue to add to the maximum value and then increase from the minimum value.

" **Down** ": This button can be used to close the door in normal working state. After entering the setting state, this button can reduce the menu items and adjust the set value downward. In the parameter setting interface, short press each time to reduce one. Long press to continuously reduce to the minimum value and then reduce from the maximum value.

" **Menu** ": Enter the setting interface and return to the previous menu.

" **Confirm** ": Enter the setting value or return to the first level menu.

" **Code Match** ": **code matching**, remote control code matching or code clearing.

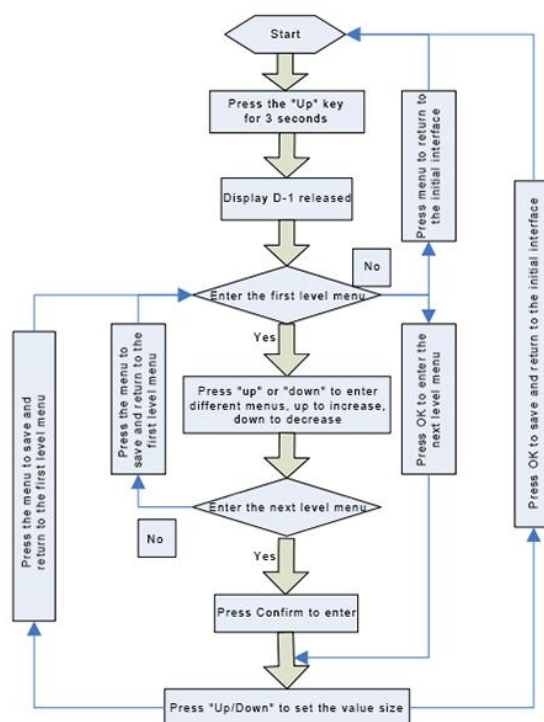
六、Parameter setting and debugging

The door opening and closing operation time and other parameters of the door opener are set through the setting button under the digital tube. The button definition is shown in the figure below. The settings are divided into parameter setting, one-key recovery and remote control pairing;

6.1 Parameter settings

6.1.1 Function parameter setting

The parameter setting method is:



The parameter setting table is as follows:

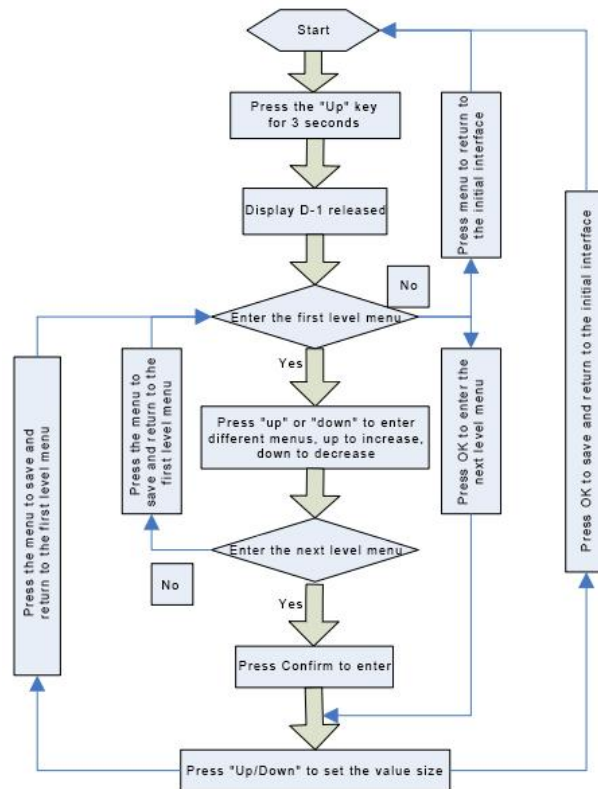
Serial number	parameter	content	Factory settings	Remark
LMenu				
1	L - 1	Entrance and exit opening time : Set the entrance and exit opening time, the setting range is 1-99 seconds	6	
2	L - 2	Gate working mode : Set the gate working mode, divided into the following: 0: Swipe card on the left and swipe card on the right, 1: Swipe card on the left and infrared on the right, 2: Swipe card on the right and infrared on the left, 3: Swipe card on both sides Setting range: 0-3	0	
3	L - 3	Delayed closing time : Set the delayed closing time, the setting range is 0.1-9.9 seconds	0.2 seconds, value 2	

4	L - 4	Left side voice : Set the left side voice, the range is 0 - 40	1	
5	L - 5	Right side voice : Set the right side voice, the range is 0-40	15	
6	L - 6	Infrared overlay time : Set the infrared overlay time, the range is 0-3.0 (seconds)	3.0 seconds, value 30	
7	L - 7	Power off opening direction : Set the power off opening direction, divided into 0-left opening, 1-right opening	0	
8	L - 8	Alarm voice : Set the alarm voice content, 0: Please swipe your card if you break in illegally 1: Beep	0	
9	L - 9	Entrance and exit memory function configuration : Setting content: 0: Without memory function 1: With memory function	0	
10	L - 1 0	Infrared anti-pinch action : The setting content is: 0 - When there is an anti-pinch infrared signal during the closing process, the door stops, and the signal disappears and then continues to close ; 1 - When there is an anti-pinch infrared signal during the closing process, the door opens first, and then continues to close after the signal disappears	0	
11	L - 1 1	Infrared quantity : Infrared quantity : 4-6 pairs, only 4 pairs can be connected	0	
12	L - 1 2	Voice volume : The setting range is: 0-15, the larger the value, the louder the volume	6	
13	L - 1 3	Voice test : Press the " OK " key to exit , press the " Menu " key to exit , press the "Confirm" key again to return to standby mode	0	
14	L - 1 4	Aging test : Value: 0 10 30 60 100, representing: Close aging, 1s interval aging, 3s interval aging, 6s interval aging, 10s interval aging	0	
17	L - 1 7	Reverse gate closing selection : The setting content is: 0: The gate will not be closed if there is a signal from the last pair of anti-pinch, and the gate will be closed if the signal disappears ; 1: Close the gate directly, regardless of whether there is a signal from the last pair of infrared signals ; 2: Alarm only, not closing the gate , setting range: 0-2,	0	
18	L - 18	Light strip selection : Two-color light Three-color light control selection : 0: Two-color light ; 1: Three-color light 2 : Three-color light flashing	0	
19	L - 19	can be opened in the channel : The setting content is: 0 - the gate can be opened by swiping a card in the channel , 1 - the gate cannot be opened by swiping a card in the channel	0	
20	L-20	Wing gate infrared closing gate selection : The setting content is: 0 - the wing gate closes after passing the anti-pinch area , 1 - the wing gate passes the last pair of infrared closing gates	0	
twenty one	L-21	Is infrared tailing on? The setting content is: 0 - not on , 1 - on (after a person enters the channel, if the infrared at the first entrance is blocked again, it is considered a tailing alarm)	0	
twenty two	L-22	Whether to close the gate when following : The setting content is: 0 - only alarm after following, no gate closing , 1 - alarm after following, close the gate directly (anti-pinch has the highest priority, and the gate will be closed only when there is no anti-pinch infrared signal)	0	
twenty three	L-23	Opening time: Setting range: 0-5.0 seconds	5.0, value 50	

twenty four	L-24	Tailing alarm voice : Setting range: 0-100	40	
25	L-25	Reverse alarm voice : Setting range: 0-100	42	
26	L-26	Detention alarm voice : Setting range: 0-100	41	
27	L-27	Remote control module switch : Setting range: 0-1, 0: Remote control off, 1: Remote control on	1	
28	L-28	Remote control code : code quantity: 0-20	0	
29	L-29	Waiting time after anti-pinch : Setting range: 0.1 -10.0 seconds . After the anti-pinch signal is triggered , the door will close after this time delay .	0.1, value 1	
30	L-30	Communication ID : Setting range: 1 - 255	1	
31	L-31	Communication baud rate : Setting range: 0-4, 0 - 9600 ; 1 - 19200 ; 2-38400; 3-57600; 4- 115200	1	
32	L-32	0 - Four pairs of infrared logic ; 1 - Two pairs of infrared logic ; 2 - Four pairs of infrared with anti-pinch	2	
33	L-33	Whether infrared anti-pinch function needs to be merged: The setting content is: 0 - anti-pinch function is not merged , 1 - anti-pinch function is merged ,	0	
34	L-34	Serial port active upload interval : Actively upload status information to the serial port , setting range: 0: 485 communication protocol; 1-999MQTT protocol active upload interval S	20	
35	L-35	Infrared fault judgment time : The setting range is: 1-999 seconds . If the infrared signal continues to exceed this time, it is considered an infrared fault.	60	
52	L-52	Language setting: Setting range: 0-2, 0-Chinese, 1-English, 2-Chinese and English	0	

6.1.2 Advanced parameter settings

The parameter setting method is:



The parameter setting table is as follows:

Serial number	parameter	content	Factory settings	Remark
1	D-1	Zero position setting : first disable the motor, manually swing to zero position, and send a save command to save the position data	0	
2	D-2	Left door position setting : first disable the motor, manually swing to the left open position, send a save command to save the position data, and then return to the closed position	0	
3	D-3	Right door position setting : first disable the motor, manually swing to the left open position, send a save command to save the position data, and then return to the closed position		
4	D-4	Door opening and closing speed setting : Setting range: 1- 1 0, the larger the value, the slower the speed	3	
5	D-5	Gate mode : Setting content: 0 - double swing , 1 - wing gate , 2 - single swing, setting range: 0-2	0	
6	D-6	Is there a clutch : Setting content: 0 - No, 1 - Yes	0	
7	D-7	Rebound mode : The settings are: 0 - After hitting someone, it bounces back and continues to fire , 1 - After hitting someone , it pauses and continues to fire	0	
8	D-8	Host resistance strength : Setting range: 1-20 , the larger the value, the greater the resistance .	10	
9	D-9	Clutch reset time : Setting range: 0 - 30 seconds, clutch release time	3	
10	D-10	Main door closing buffer strength (minimum end speed): Setting range: 1 - 150 The larger the value, the greater the force in place	50	
11	D-11	Main engine motor speed: Setting range: 1 - 1 00 , the larger the value, the faster the speed	65	
12	D-12	from the mechanism door (minimum end speed): Setting range: 1 - 150 The larger the value, the greater the force in place	50	
13	D-13	Slave motor speed: Setting range: 1 - 100 The larger the value,	65	

		the faster the speed		
14	D-14	Power supply power: Setting range: 1.0-10.0 , unit : A, how much power is needed, just select half of this value , the power supply can generally ensure that it will not restart	4.5	
15	D-15	Power on return to closed door position speed : Setting range: 1-1 0 The larger the value, the faster the change; the smaller the value, the slower the change.	5	
16	D-16	Swing gate zero direction : The setting content is: 0 - 1. If the wing gate position is wrong, adjust it to 1 and the door closing position will be in another direction . 0-positive direction 1 negative direction	0	
17	D-17	Anti-pinch sensitivity : Setting range: 1-99 , precision: 0.1, unit A: The larger the value, the less sensitive the physical anti-pinch, the smaller the value, the more sensitive the anti-pinch	35	
18	D-18	Physical anti-pinch current time : Setting range: 1-99 , unit: mS, the larger the value, the less sensitive the physical anti-pinch, the smaller the value, the more sensitive the anti-pinch	50	
19	D-19	Acceleration current: The setting range is: 0 - 999. The larger the value , the faster the motor starts. The smaller the value, the slower the motor starts.	160	
20	D-20	Acceleration current time: The setting range is: 0 -99 9, the larger the value, the faster the motor starts, the smaller the value, the slower the motor starts	10	
twenty one	D-21	Clutch engagement angle : Setting range: 1-100 , the larger the value, the larger the engagement angle, the smaller the value, the smaller the engagement angle	15	
twenty two	D-22	Duty cycle of clutch adjustment : Setting range: 10-10 5 , the larger the value, the greater the force	103	
twenty three	D-23	Physical anti-pinch reaction time : Setting range: 0-200 , the slower the speed, the larger the value	0	
twenty four	D-24	Stall sensitivity: Setting range: 1-100 , representing 0.1-10.0 seconds. The larger the value, the longer the stall, and the smaller the value, the shorter the stall	2.0, value 20	
25	D-25	Current protection duration : Setting range: 1-150 seconds, motor output protection duration , the larger the value, the longer the protection duration, the smaller the value, the shorter the protection duration . If the motor outputs continuously for more than this time, the shaft will loosen and it will automatically recover after the set value .	3	
26	D-26	Slave resistance strength : Setting range: 1-20 , the larger the value , the greater the resistance strength	13	
27	D-27	Deceleration stroke: Setting range: 1-10, the larger the value, the earlier the deceleration	8	
28	D-28	Rebound waiting time : Setting range: 0.1 -10 seconds , setting value: 1-100, the larger the value, the longer the stall, the smaller the value, the shorter the stall	2.0, value 20	
29	D-29	Fire or power off opening speed : Setting range: 1-10, the larger the value, the slower the speed	6	
30	D-30	Rebound dead zone angle : Setting range: 1 - 90 ° , the larger the value, the longer the stall, the smaller the value, the shorter the stall.	5	
33	D-33	Determine the in-place angle : The setting range is: 0-100 HALL , and the angle is considered in-place if the difference is within the set value	5	
47	D-47	Slave homing direction: Setting range: 0-1, 0: positive direction, 1: negative direction	0	
48	D-48	Master-slave selection: Setting content: 0-1 0: Master 1: Slave	0	

49	D-49	Hardware overcurrent recovery time: Setting range: 1-100, waiting time for recovery after hardware overcurrent	4	
50	D-50	Host zeroing direction: Setting range: 0-1, 0: positive direction, 1: negative direction	0	

6.1.3 Voice content list

Serial number	Voice content	Remark
0	Please swipe your card if you enter illegally	
1	Welcome to visit us again	
2	Welcome Home	
3	Have a safe journey	
4	Thank you for your patronage. Goodbye.	
5	Please pass	
6	System startup completed	
7	No access	
8	System error please check	
9	Thanks	
10	Bon Voyage	
11	Please swipe your card	
12	You have entered the regulatory area	
13	Please wear a safety helmet when entering the construction site	
14	Beep	
15	Welcome	
16	Swing gate zero position setting	
17	Please push the swing arm to the side of the chassis first	
18	Then push the swing arm to the other side of the chassis	
19	Please push the swing arm to the closing position you want	
20	Card swiping successful	
twenty one	Saved successfully	
twenty two	be safe	
twenty three	Go to work safely and return home safely	
twenty four	Good luck	
25	Wish you peace	
26	Please pass	
27	I wish you good luck in your work	
28	Please go through	
29	Please scan your face if you are entering illegally	
30	Children are welcome	
31	Goodbye, kids	

32	Please scan your face to pass	
33	I wish you good health	
34	Welcome to our school	
35	Go home and be safe	
36	Hello, I'm connected.	
37	Goodbye, Master	
38	Welcome	
39	Thank you and bye	
40	Do not follow	
41	Do not stay in the passage	
42	Do not drive in the opposite direction	
43	I am the host	
44	I'm the deputy pilot	
45	No entry allowed, please scan the health code	

6.2 One-click parameter restoration to factory settings

Press and hold the "Confirm" button, the digital tube displays: ---, then press "On", "Off", "On", "Off", "On", "Off" three times, then press the "Confirm" button, power off and restart to restore the factory settings.

6.3 Remote control code pairing and clearing

6.3.1 Remote control pairing: Press the "Pairing" button for three seconds, the digital tube displays "— — 0", then press any key on the first remote control, the digital tube displays "— — 1", then press any key on another remote control, the digital tube displays "— — 2", and so on, until the digital tube displays "— — N", press the "Confirm" button, and the pairing of N remote controls is successful.

6.3.2 Remote control code clearing: Press the "Pairing" button for three seconds, the digital tube displays - — N (N represents the number of remote controls successfully paired), then press and hold "On" for three seconds, the digital tube displays - — 0, code clearing is successful, press the confirm button to return to normal standby mode.

6.4 Motor direction adjustment

If the door opens and closes in the opposite direction during debugging, you need to enter menu L-15 and/or L-16, set the motor direction, and then debug.

6.5 Debugging change

After the door opener is assembled and QC tested, it can be powered on for testing. Each time it is powered on, the digital tube displays "000". After the power-on self-test is completed, the digital tube displays the angle of the door, and displays 0° in the closed position.

6.6 aging

6.6.1 Entering aging: After debugging is completed, the device can enter the aging mode for aging. According to the function parameter setting process, enter the "L-14" setting interface , set the required aging time interval, and the gate enters the aging mode;

6.6.2 Exit aging: According to the function parameter setting process, enter the "L-14" setting interface, set the time interval to "0", and the gate will exit the aging mode.

七、Common troubleshooting

Serial number	Frequently asked questions	Treatment
1	The door opening direction is wrong	Check whether the left opening/right opening wiring is correct Check the door opening direction setting
2	The door opening angle is incorrect	D-2 and D-3 are required to set the angle according to the direction of the left/right door opening.
3	Digital tube does not light up	Check the circuit to see if there is a short circuit or open circuit.
4	Clutch power off	Check whether the clutch is stuck.
5	Door opening and closing	Check the D-10 and D-12 settings and adjust them down.
6	The gate has not been closed	1、Check whether the door opening signal of the access control system is always on; 2、Check whether the anti-pinch infrared has a signal all the time.
7	The gate is constantly opening and closing	D-23 adjusted to 0
8	The swing arm of the swing gate is not synchronized	Adjust the setting values of D-11 master motor speed and D-13 slave motor speed , and lower the faster value.
9	The zero position of the wing gate is incorrect	Adjust the zero position direction of the D-16 wing gate and adjust the value to another value
10	Digital tube display E1	The main motor Hall error, check whether the Hall connection is normal
11	Digital tube display E2	From the motor Hall error, check whether the Hall wiring is normal
12	Digital tube display E3	The main motor is overcurrent, check the main motor wiring for short circuit Check whether the main motor is blocked
13	Digital tube display E4	Overcurrent from the motor, check for short circuit in the motor wiring Check whether the slave motor is blocked
14	Digital tube display E5	Main motor overtime protection, check whether the main motor is stuck
15	Digital tube display E6	Slave motor timeout protection, check whether the slave motor is stuck
16	Digital tube display E7	Overvoltage protection, check whether the

		power supply voltage is normal
17	Digital tube display E8	Low voltage protection, check whether the power supply voltage is normal Check if there is any abnormal line connection
18	Digital tube display E9	Rebound when encountering resistance to see if there is an obstacle in the channel
19	Digital tube display EA	Brake the motor to see if there is any infrared blocking
20	Digital tube display EE	Internal encryption abnormality, control board failure
twenty one	Digital tube display E11	The first pair of infrared fails, check whether the power supply of the first pair of infrared is normal; Is the first pair of infrared wiring normal? Is the first pair of infrared blocked?
twenty two	Digital tube display E12	The second pair of infrared is faulty, check whether the second pair of infrared power supply is normal; Is the second pair of infrared wiring normal? Is the second pair of infrared blocked?
twenty three	Digital tube display E13	The third pair of infrared is faulty, check whether the third pair of infrared power supply is normal; Is the third pair of infrared wiring normal? Is the third pair of infrared blocked?
twenty four	Digital tube display E14	The fourth pair of infrared is faulty. Check whether the fourth pair of infrared power supply is normal. Is the fourth pair of infrared wiring normal? Is the fourth pair of infrared blocked?
25	Digital tube display E15	The first pair of parallel infrared is faulty. Check whether the power supply of the first pair of parallel infrared is normal. Is the first pair of parallel infrared wiring normal? Is the first pair of parallel infrared obstructed?
26	Digital tube display E16	The fourth parallel infrared pair is faulty. Check whether the power supply of the fourth parallel infrared pair is normal. Is the fourth pair of parallel infrared wiring normal? Is the fourth pair of infrared sensors in parallel blocked?
27	Digital tube display E30	Communication failure, check whether the communication line is normal and the contact is good