MANUAL

1. Precautions for external devices

1) The DC motor voltage is related to the input voltage, the input is 24V, the optional motor voltage is 24V, and the power is controlled at 100W or above.
2) The voltage on the board is 24V, and the current should be controlled within 1A. Exceeding it will cause overcurrent protection, and the output voltage will decrease, which may cause some components to not work properly.
3) The DC power supply is above 24V 10A

2. Installation and debugging instructions

1) Line pre-buried
   The position of the chassis is determined according to the customer's requirements. If the concrete base needs to be poured, it can be completed in advance (the size of the base is about 100-150mm larger than the outer dimension of the bottom of the boom barrier). Pre-embed or excavate the cable trenches between the guard boxes, bury the line pipes, and penetrate the 3X1.5 square millimeter power lines and 4X0.5 square millimeters control lines used by the equipment. After confirming that there is no error, backfill the concrete.
2) Fixed chassis
   Put the chassis in a fixed position. Then mark the center of the screw holes on the bottom plate of the chassis and the edge of the chassis base, remove the boom barrier, and drill vertically with a drill bit on the marked screw holes (the size of the drill bit should match the expansion bolts provided with the equipment), The depth should meet the length requirements of the expansion screw. Move the chassis to its original position, drive in the expansion screws and fasten them firmly.
3) Installation of brake lever
   After the boom barrier box is firmly fixed, the boom barrier rod can be installed at the position of the rod handle, tightened with the provided screws, and ensure that the boom barrier rod is not inclined.

4) Installation of peripheral equipment

The boom barrier is installed firmly, and after the debugging is completed, according to the needs of the customer, the chassis circuit and the control circuit of the related peripheral equipment can be connected according to the wiring diagram of the barrier control board, and related debugging can be carried out.

3. Mainboard wiring diagram (4-x Version)
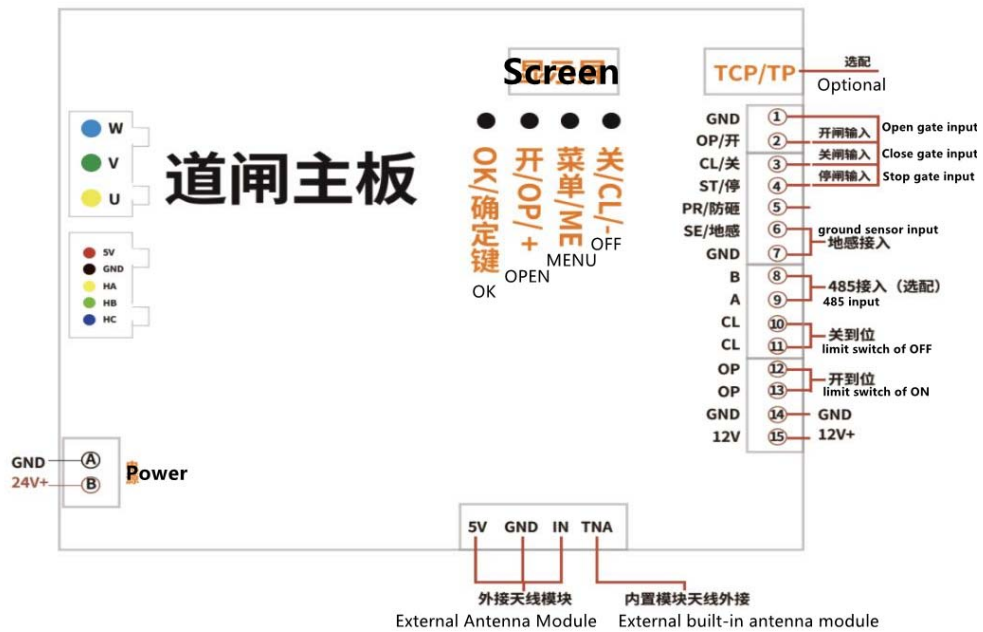
Precautions:

a) Motor core interface: There are a total of 8 wires coming out of the core, and three thick wires are connected to the motor core interface. The wiring method is as follows. (Note: The following is the wiring method of the motor used by our company. The motor used by our company is a city state brushless motor, and the colors of the three thick wires are blue, green and yellow respectively. If the actual motor model used is inconsistent with our motor model , please connect according to the corresponding wiring standard, if the wiring is incorrect, the motor will vibrate when running.)

The interface marked "W" on the main board is wired in thick blue;

The interface marked with "V" on the main board is wired in thick green;

The interface marked with "U" on the main board has thick yellow wiring.

b) Wiring mode of motor Hall interface:

The interface marked "5V+" on the main board is connected to the 5V power cord of the motor Hall;The interface marked "GND" on the main board is connected to the GND of the motor hall;For the interface marked "HA" on the main board, the color of the wiring is the same as the color of the "U" line of the motor core interface (thin yellow);The color of the interface marked "HB" on the main board is the same as the color of the "V" line of the motor core interface (thin green);For the interface marked "HC" on the main board, the color of the wiring is the same as the color of the "W" line of the motor core interface (thin blue);If the motor model is different from that used by our company, please connect according to the corresponding wiring standard.

4. set action

Step 1: After power on, press the menu key to enter the menu item interface, display (L-X), press the plus and minus keys to select the option corresponding to the parameter to be adjusted (for example: L-1), press the OK key to enter this option Adjust the parameters and press the OK key again to return to the menu item interface. After entering the corresponding option, press the plus and minus keys to adjust the parameter value (for example, 080). After the setting is completed, press the menu key once to return to the start interface.

Adjustment parameters:

Refer to the Setting Parameters table for default values. After setting the parameters, press the menu key to exit.

Step 2: After setting the parameters, power off and restart. Press the open button, after the pole reaches the position, there will be a long beep, and when the close button is pressed, there will be a long beep after the pole falls. If you find that on is off and off is on, please set the L-D/13 option to set the left and right to fall. After the setting is completed, you need to power off and restart and repeat the second step until the correct position.

Step 3: Then run the equipment. If there is any inappropriate place, adjust the corresponding parameters as needed.

Step 4: After adjusting the parameters, lock the chassis and use it normally.

5. Main board debugging steps:

1) Confirm left and right drop

   a) When the power is on, the main board displays normally: 190, the motor does not move.

   b) Manually turn on/off the motor, and automatically detect the open limit/close limit. (On/off limit needs to be detected) During detection, the on/off limit motor will stop automatically after it is blocked. At this time, the self-test data will be automatically saved, and the buzzer will sound for a long time. The position is completed, the open limit and the close limit need to be operated in the same way to complete the self-checking action, and the board will run normally.

   c) If the switch is reversed during manual detection, then you need to enter the main board menu L-14, and change the motor left and right drop mode until it is correct.

2) Debug the horizontal and vertical positions of the barrier lever

   After the self-inspection is completed, manually open/close the gate to test the normal operation state of the gate, and check whether the gate opening/closing position is normal. -10 (vertical hanging certificate) debugging (debug the corresponding parameters according to the site conditions, refer to the parameter table parameter description debugging).

3) Debug the speed and stable operation of the barrier when opening/closing the barrier.

a) Adjust the value of L-29 and L-30, which is the learning speed when power off and on. The default preset value of the software is 0.8S movement with a 6-meter straight rod. For other movements, this parameter can be appropriately increased, otherwise, the motor running time protection [L-38] parameter item may be triggered after power off and on, resulting in failure to use normally after power off.

b) Opening speed L-1: The larger the value, the faster the speed.

c) Closing speed L-2: The larger the value, the faster the speed.

d) Opening deceleration stroke L-11: The larger the value, the larger the deceleration distance.

e) Closing deceleration stroke L-12: The larger the value, the greater the deceleration distance.

f) The larger the value of the opening/closing deceleration stroke, will affect the opening/closing speed, which will be adjusted in real time according to the on-site operation status.

g) Check whether the gate lever shakes when the gate is opened/closed in place, adjust the L-3 and L-4 parameter values (adjusted according to the site conditions). If the parameter is too small, the gate will not move when the open/close is in place, and if the parameter is too large, the open/close in-position bar will shake.

h) The second stage deceleration stroke L-17, the larger the value is, the greater the forced deceleration stroke, the second stage deceleration angle needs to be adjusted to be smaller than the first stage deceleration, generally used for movement adjustment below 1 second. Due to the small torque of the movement, a forced motor brake is required to decelerate.

i) The second stage of closing deceleration stroke L-18, the second stage of deceleration angle needs to be adjusted to be smaller than the first stage of deceleration. Generally used for movement adjustment under 1 second. Due to the small torque of the movement, a forced motor brake is required to decelerate

4) Adjustment of rebound in case of resistance

1: L-13 adjusts the rebounding force in case of resistance

If the parameter is too small, it will appear that the gate lever will bounce back when it is halfway open/closed, and adjust the parameters according to the site conditions.

6. Setting parameter table 4-X (4 led displays)
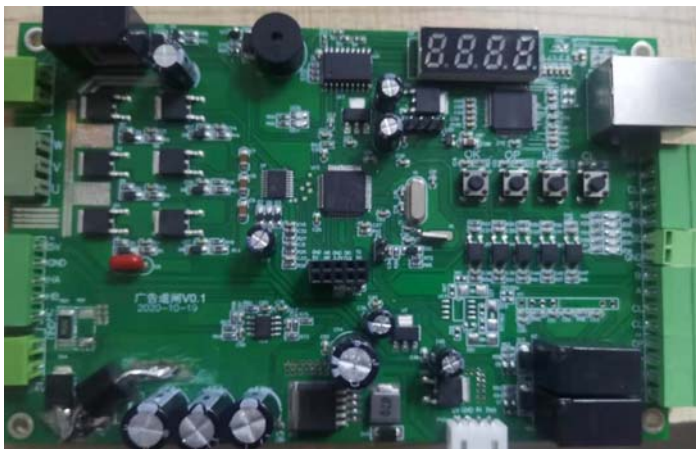
Menu No.	Set range	Defaults	Parameter Description	Mark
L - 0			View current version Check if it has been updated Press OK in the version interface, and 0 is displayed. At this time, press the up and down keys to set the machine number. After setting, press OK to exit	
L - 1	0 - 90	35	Opening speed adjustment, the higher the speed, the faster the opening speed	
L - 2	0 - 90	30	Closing speed adjustment, the higher the speed, the faster the closing speed	
L - 3	0 - 90	3	Open in-position speed adjustment, the greater the speed, the greater the buffering speed	
L - 4	0 - 90	3	Close the speed adjustment in place, the	

			greater the speed, the greater the buffering speed	
L - 5	0 - 255	15	touch bounce sensitivity	
L - 6	0 - 255	80	Motor strength value, the larger the number, the greater the motor strength	
L - 7	0 - 255	4	Barrier level adjustment value	
L - 8	0 - 255	0	Test mode selection, 0 (off), 1 (automatic running test), after 2-255 the value represents the time interval of automatic running	
L - 9	0 - 255	1	0: One car and one pole mode Note: When the car in front is pressed on the ground, the license plate detects the license plate of the rear car and gives a signal to open the brake, and the car in front will drop the pole when it leaves the pole. 1: Trailing vehicle mode Note: When the vehicle in front is pressed on the ground, the license plate detects the license plate of the rear vehicle and gives a signal to open the brake, the front vehicle leaves the pole and does not fall, until the rear vehicle leaves, the pole will fall	
L - 10	0 - 90	3	Barrier vertical position adjustment value	
L - 11	0 - 90	30	The first stage of deceleration stroke	
L - 12	0 - 90	55	The first stage of closing deceleration stroke	
L - 13	0 - 255	48	Anti-smashing car strength adjustment value (the smaller the value, the more sensitive the reflection)	
L - 14	0 - 1	0	Drop left and right drop settings: 0 for left drop, 1 for right drop	
L - 15	0 - 100	25	The force value of the gate start motor, and the instantaneous power of start. Both power failure and study position completion are valid	
L - 16			Add remote control: After entering, it will display "4 - 2". Press the "+" sign to display the number of remote controls entered in the current gate, press the remote control on, off, and stop in turn, the screen will display 100X, 200X, 300X,	

			and a beep After a long beep, it means the input is successful, and the first digit becomes 0. Delete remote control: After entering, it will display "4 - 2". Press the "-" sign to display the number of remote controls registered in the current gate. Press the registered remote control, the number will decrease, and the deletion is completed. Delete all remote controls: After entering, it will display "4 - 2", press "-", it will display the number of remote controls entered in the current gate, press and hold the "OK" button for 10 seconds on this interface. After releasing, the buzzer beeps twice. delete all remotes	
L - 17	0 - 90	15	The second stage of the forced brake deceleration stroke	
L - 18	0 - 90	20	The second stage of forced closing deceleration stroke	
L - 19			In development. . .	
L – 20			After entering this interface, the switch will display the rise and fall time. For example, 200 represents 2 seconds. At this time, press the main board switch button to check the rise and fall time.	
L – 21			Set how long after the pole is started, no car passes, and how long does it take for the pole to fall automatically, unit: second	
L - 22	0 - 255	80	Motor positioning monitoring time, unit = 2ms, locked rotor time during positioning, the default value of learning after the motor does not move. Developer options, no changes are recommended	
L - 23	0-1	0	Motor learning mode change: After the switch is learned once, set it to 1. Then after the power is turned off and	没用

			restarted, you only need to position the switch on or off to restore the normal speed.	
L - 24	0-55	0	At what angle is set, the ground sense function will fail。	
L - 25	0-1	0	Relay output mode. Set to 0: During the opening process, the open signal is always open. During the closing process, the relay off signal is normally open Set to 1: switch signal input, relay not output Remote control press to open: output 500ms open signal Remote control press off: output 500ms off signal	
L-26	0-50	17	The first stage deceleration minimum duty cycle	
L-27	0-255	00	Machine number setting	
L-28	0-255	5	Anti-smash model signal filtering time (unit: 10ms)	
L-29	0-60	20	Self-learning speed at power-on	
L-30	0-60	20	Turn off self-learning speed	
L-31	0-90	0	When the spring tension is too small, the rod falls freely and presses "pause" at any position, the stop position of the rod will be memorized, and it will rise to the memory position after slipping.	
L-32	0-250	0	Ground-sensing delay off (unit: 100ms)	
L-33	0-90	60	Braking force value, the larger the value, the greater the braking force, open. The brakes of the first stroke and the second stroke are effective, and the reverse rotation is effective.	
L-34	0-90	60	The value of the braking force, the larger	

			the value, the greater the braking force, off. The brakes on both the first and second strokes are active. Inversion is valid.	
L-35	0-255	90	Reverse reaction time, be careful not to set it to 0. When it is set to 0, when the spring tension is small and cannot decelerate to the set reversal deceleration value, the ground sense or lift lever will not be able to reverse.	
L-36	0-90	5	Reverse reaction speed. No modification is recommended	
L-37	0-255	20	Signal stabilization time detection, the unit is 10ms. Refers to how long the switch signal lasts to be valid. It is generally used for situations such as automatic lifting of the pole caused by the interference of the signal line caused by the strong and weak electricity of the customer.	
L-38	0-255	35	Motor running overtime detection, the unit is S. After the motor runs beyond this time, it is necessary to relearn the upper and lower limits.	
L-39	0-85	0	The angle of failure of rebound in case of resistance.	
L-40	0-90	0	The switch is in place to detect the angle. After the opening or closing is in place, it is detected that it is pulled up by external force. When it is artificially or not reached the mechanical locking position, the pole runs to the opening or closing position.	
L-41	0-1	0	When set to 1, the remote control learns the switch in place, press and hold the remote control to open to the specified position, press stop for learning, it is open in place, press the remote control to close to the specified position, and press	

			stop to learn, it is closed in place. After the setting is completed, if the power is turned off and restarted, it needs to be reset. It is suitable for places with obstacles in the vertical direction of the brake rod, or special requirements in the horizontal direction of the brake rod.	

7. Fault code prompt processing:

Error code	Failure analysis	troubleshooting
E-01	Motor running time out	Use a multimeter to measure whether the motherboard has an output 5V voltage supplied to the Hall switch.
E-02	Poor contact of motor hall signal line	rewire
E-03	Remote control repeated entry	
E-04	Remote Control Duplicate Deletion	
E-05	parameter table error	reset
E-06	Motherboard driver tube damaged	Replace the motherboard
E-07	Poor contact of motor U, V, W motor drive lines	rewire