Specification of Brushless DC Barrier Gate Control Board (V3.0)

I. Motherboard Installation Wiring Diagram

Confirm | **Close/+** | **Menu** | **Open/-**

Wiring instruction for lead-out line of remote control antenna.
1. Good connection with the motor case is required.
2. Or add an antenna to lead it out of the motor case.
3. Or connect in parallel with the opening signal wire and connect to the opening signal terminal of the Mainboard.

Motor
- U
- V
- W
- GND
- Ha
- Hb
- Hc
- VCC

Power supply
- GND
- 24V

Green light/closed in place
Red light/opened in place
GND
12V+

12V+
Open
Close
Stop
GND
Infrared sensor
Loop detector
12V+

5V | DA | GND | GND | 3.3V | TX | RX

External remote control

External antenna

Communication port

II. Check Before Power on

Please check the following items before connecting the power for the barrier gate:

1. Make sure the power supply is DC24V/10A.

2. Make sure the polarity and sequence of all external wires (power

supply wire、motor wire、loop detector wire, etc.) are correct, all wirings are firm and stable.

III. Power on Self-Check Process

1. When the barrier gate is powered on and the digital tube on the motherboard displays "190", the first matching and self-check shall be started by manually pressing the "open" and "close" buttons on the motherboard for one self-check learning. The motherboard will automatically remember the motor travel, so anytime when power is off, users can simply use a remote control or a license plate recognition camera to send "open" or "close" commands.

2. Self-check is realized by learning two fixed limit positions of the motor. Please make sure that the opening angle is above 90° and the closing angle below 0° before self-check learning, so as to facilitate the subsequent debugging horizontally and vertically.

❖ **Note: For the first installation, you must use the "open" and "close" buttons on the motherboard to complete one self-check learning for open and close travel of the barrier gate after the first power on.**

IV. Power on Self-Check Precautions

Please pay attention to the following items during the self-check:

1. Whether the polarity of the motor is correct: If it is wrong, the self-check of the barrier gate cannot be completed. The menu to adjust the motor's polarity is: L-d.
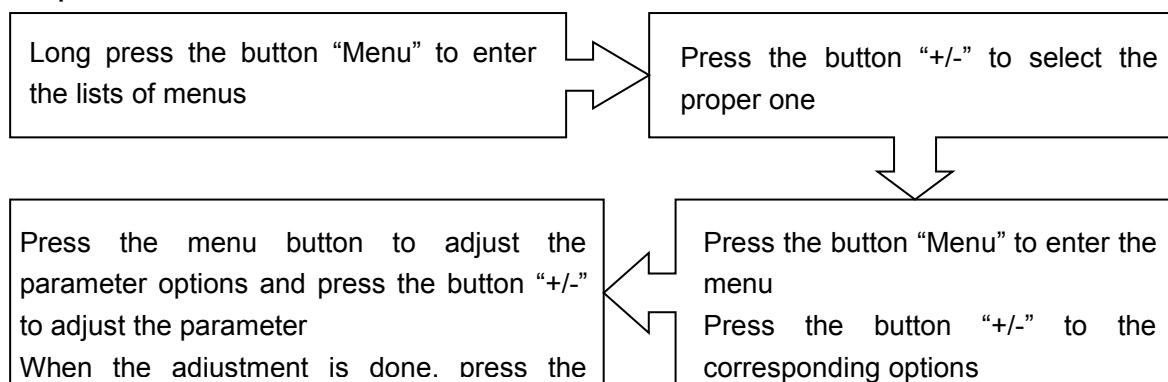
(1/2 for CPG motor)

2. Whether the left or right direction is correct: if not, the barrier gate is actually "close" when the motor is "open", and vice versa.

The number displayed on the digital tube of the motherboard will be in reverse accordingly.
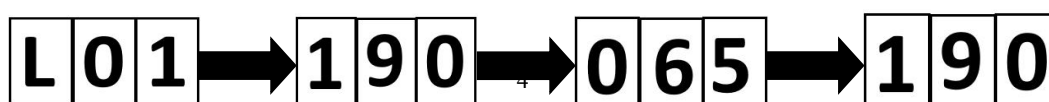
The normal condition is: When the motor is "open", the number displayed in the digital tube increases and when the motor is "close", it decreases. If it goes the other way, please use the menu L-d for adjustment.

V. Operation Flow of Motherboard Parameter Setting

1. Operation Flow

Long press the button "Menu" to enter the lists of menus	→	Press the button "+/-" to select the proper one

Press the menu button to adjust the parameter options and press the button "+/-" to adjust the parameter When the adjustment is done, press the	←	Press the button "Menu" to enter the menu Press the button "+/-" to the corresponding options

2. The Corresponding Information Displaying on the Digital Tube

L01 ➡ 190 ➡ 065 ➡ 190

VI. Parameter Setting Table

Functions	Alphabetic Menu	Numerical Menu	Set Parameter Value	Default Parameter Value	Parameter Value Setting Description
Opening speed adjustment	L-1	L01	20-95	65	The larger the value is, the faster the opening speed will be; The smaller the value is, the slower the opening speed will be.
Closing speed adjustment	L-2	L02	20-95	65	The larger the value is, the faster the closing speed will be; The smaller the value is, the slower the closing speed will be.
Barrier boom stability adjustment after opening or closing in place	L-3	L03	8-15	12	In theory, the smaller, the more stable, but if it is too small, the barrier boom may not reach its position.
Sensitivity adjustment of anti-smash response time	L-4	L04	15-30	30	In theory, the smaller, the more sensitive, but if it is too small, the barrier gate will automatically open in the halfway of closing.
Motor strength value adjustment/Menu display form setting	L-5	L05	70-90	70	Greater value means stronger strength; Smaller value means less strong strength. When the setting parameter is an even number, the digital tube will display an alphabetic menu; when it is an odd number, the digital tube will display a numerical menu.
Barrier boom horizontal position adjustment	L-6	L06	3-90	20	The smaller the value is, the smaller the boom angle will be.
Test mode selection	L-7	L07	0-6	0	0 (manual) 1 (automatic) The following 1-5 are automatic running intervals, 1 is the fastest, 5 is the slowest, and 6 is the half-travel operation of the barrier gate.
Opening memory function setting	L-8	L08	0-1-4	0	0 (no memory) 1 (with memory) 4 (peak mode, after opening in place, press "STOP" button on the remote control to activate this function, press "CLOSE" button to cancel it.)
Barrier boom vertical position adjustment	L-9	L09	3-90	20	The smaller the value is, the smaller the opening angle will be.
Adjustment of the opening deceleration travel of the first section	L-L	L10	20-90	55	The smaller the value is, the shorter the opening deceleration travel will be.
Adjustment of the closing deceleration travel of the first section	L-b	L11	20-90	55	The smaller the value is, the shorter the closing deceleration travel will be.
Anti-smash force adjustment	L-C	L12	15-100	102	The larger the value is, the stronger the force will be. If the value is over 100, the anti-smash function will be cancelled.

				Factory setting is 102 (without anti-smash function), customer can adjust the parameters to activate this function as required.
Positive and negative operation of barrier gate core setting	L-d	L13	0-3	1	0: Motor in positive polarity, reducer will make forward rotation; 1: Motor in negative polarity, reducer will make reverse rotation; 2: Motor in negative polarity, reducer will make forward rotation; 3: Motor in positive polarity, reducer will make reverse rotation.
Motor starting strength value of barrier gate	L-E	L14	20-40	30	Motor running speed during self-check.
Adding more remote control function	L-F	L15	0-255	0	Enter into the menu: 000 means under the learning state, 253 means automatically clearing up the remote controls and exit.
Adjustment of the opening deceleration stroke of the second section	L-H	L16	1-10	0	For fast barrier gate with opening speed 0.3 second use.
Adjustment of the closing deceleration stroke of the second section	L-P	L17	0-255	0	For fast barrier gate with opening speed 0.3 second use.
Green light/light strip/detection status mode adjustment	L-18	L18	0-2	0	0 is the red and green lights mode; 1 is in-place detection mode; 2 is three-color light strip mode (An external relay is required to realize it).
Adjustment of time-delay on closing after detecting by loop detector	L-19	L19	1-255	000	The value you set will be the delay time for closing after detecting by the loop detector. E.g.: "1" means waiting for 1 second, "2" means waiting for 2 seconds, "000" means this function is disabled.
Adjustment of the Auto-close time after opening in place	L-20	L20	1-255	000	The value you set will be the waiting time for Auto-close after opening in place. E.g.: "1" means waiting for 1 second after opening in place; "2" means waiting for 2 seconds, "000" means this function is disabled.

VII. Remote Control Code Matching Operation

Remote Control Matching: First, enter into the menu L-F [L15] on the motherboard. When the LED displays "000", press any buttons on the remote control, you'll hear a sound of "DI" from
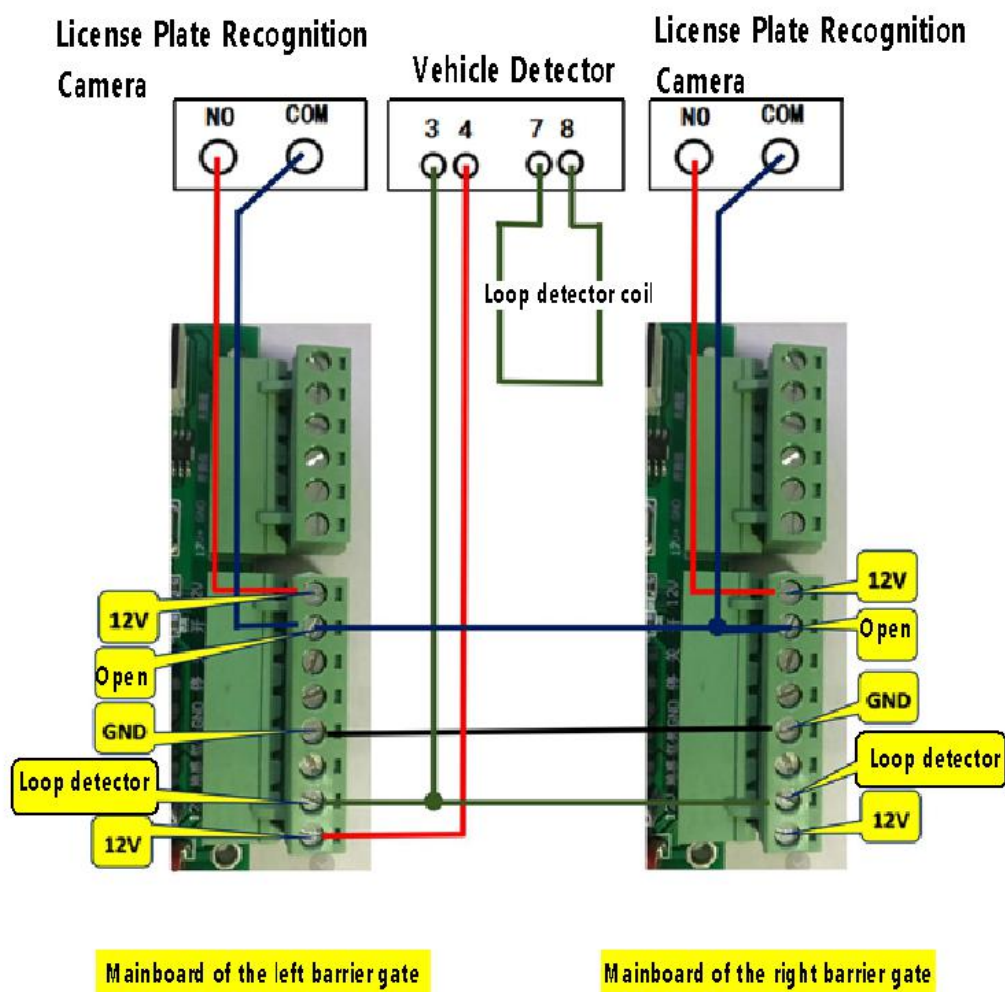
the motherboard and the LED display will automatically return to its menu selection status, which means matching is complete. Next, press the "Save" and "Exit" buttons to exit.

Clear Up the Remote Control: Clear up all the remote controls that have been successfully matched. First, enter into the menu L-F [L15] on the motherboard, press the "Menu" button to enter into the learning state; Next, adjust the parameter to 253 and the system will automatically return to menu L-F [L15], after which all remote controls are cleared up.

❖ **Note: Before making the first learning of the remote control, please clear up all matched remote controls first in case of any interference of other remote controls that were recorded before.**

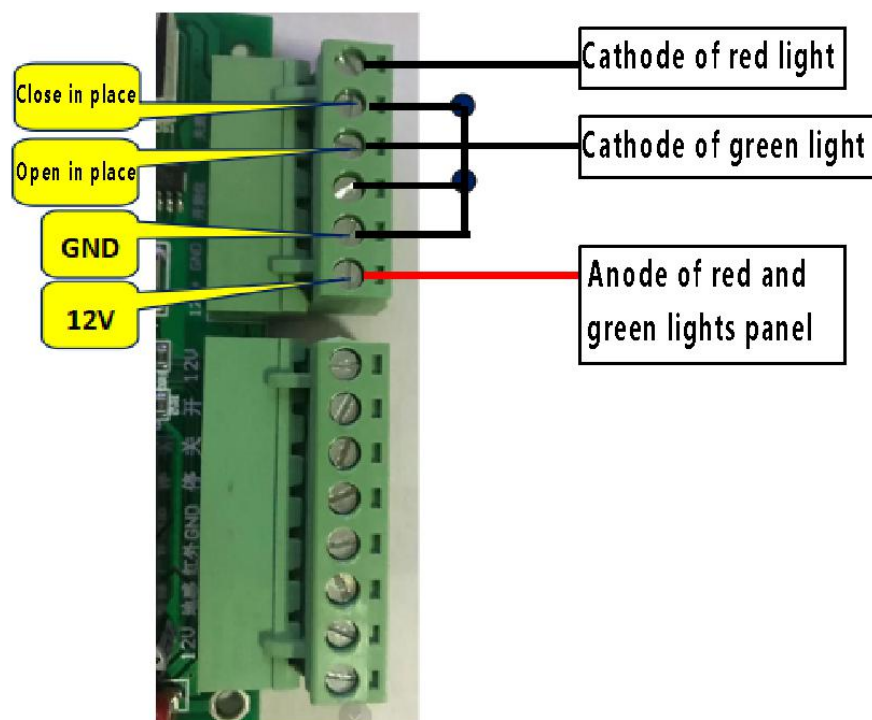# Attached Fig. 1: Wiring Diagram of Left-Right Cross Installed Barrier Gates

License Plate Recognition
Camera

Vehicle Detector

License Plate Recognition
Camera

NO   COM

3   4   7   8

NO   COM

Loop detector coil

12V

Open

GND

Loop detector

12V

12V

Open

GND

Loop detector

12V

Mainboard of the left barrier gate

Mainboard of the right barrier gate

Wiring Diagram of Left-Right Cross Installed Barrier Gates

Attached Fig. 2: Common Anode Red and Green Lights Wiring Diagram

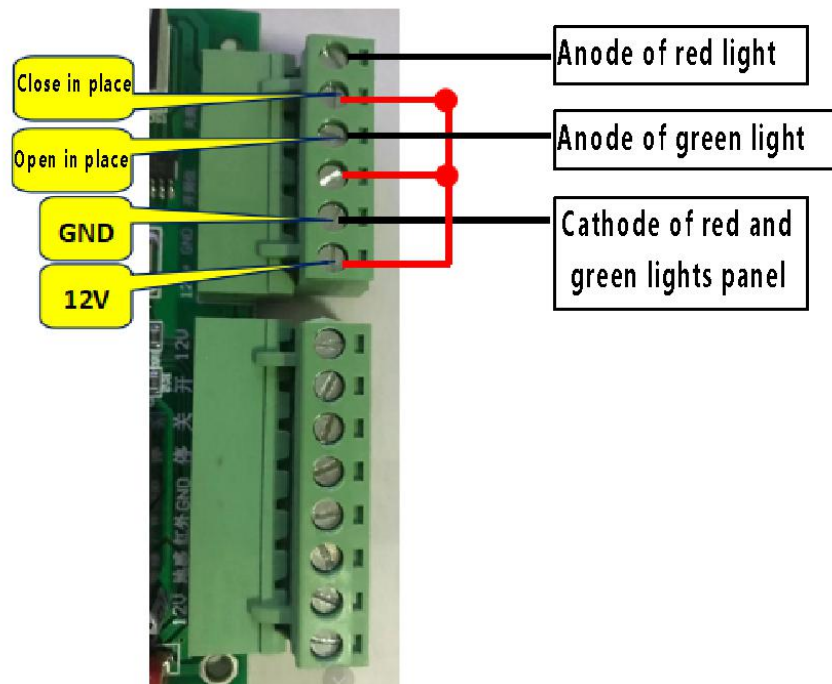Common Anode Red and Green Lights Wiring Diagram

Attached Fig. 3: Common Cathode Red and Green Lights Wiring Diagram

Close in place

Open in place

GND

12V

Anode of red light

Anode of green light

Cathode of red and green lights panel

Common Cathode Red and Green Lights Wiring Diagram